THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

Kansas Oil Men's Association, Broadview Hotel Roof Garden, Wichita, Apr. 17, 18.

National Petroleum Association, Cleveland Hotel, Cleveland, O., April 23, 24.

Indiana Petroleum Association, Hotel Severin, Indianapolis, Apr. 24.

Kentucky Petroleum Marketers Association, Brown Hotel, Louisville, May 6, 7.

National Oil Scouts Association of America, San Antonio, Tex., May 19, 20.

Natural Gasoline Association of America, Mayo Hotel, Tulsa, May 20, 21, 22.

American Society for Testing Materials, Atlantic City, N. J. June 23 to 27.

North American Gasoline Tax Conference, King Edward Hotel, Toronto, Ont., Sept. 2, 3, 4.

National Safety Council, Petroleum Section, Pittsburgh, Pa., Sept. 29 to Oct. 4.

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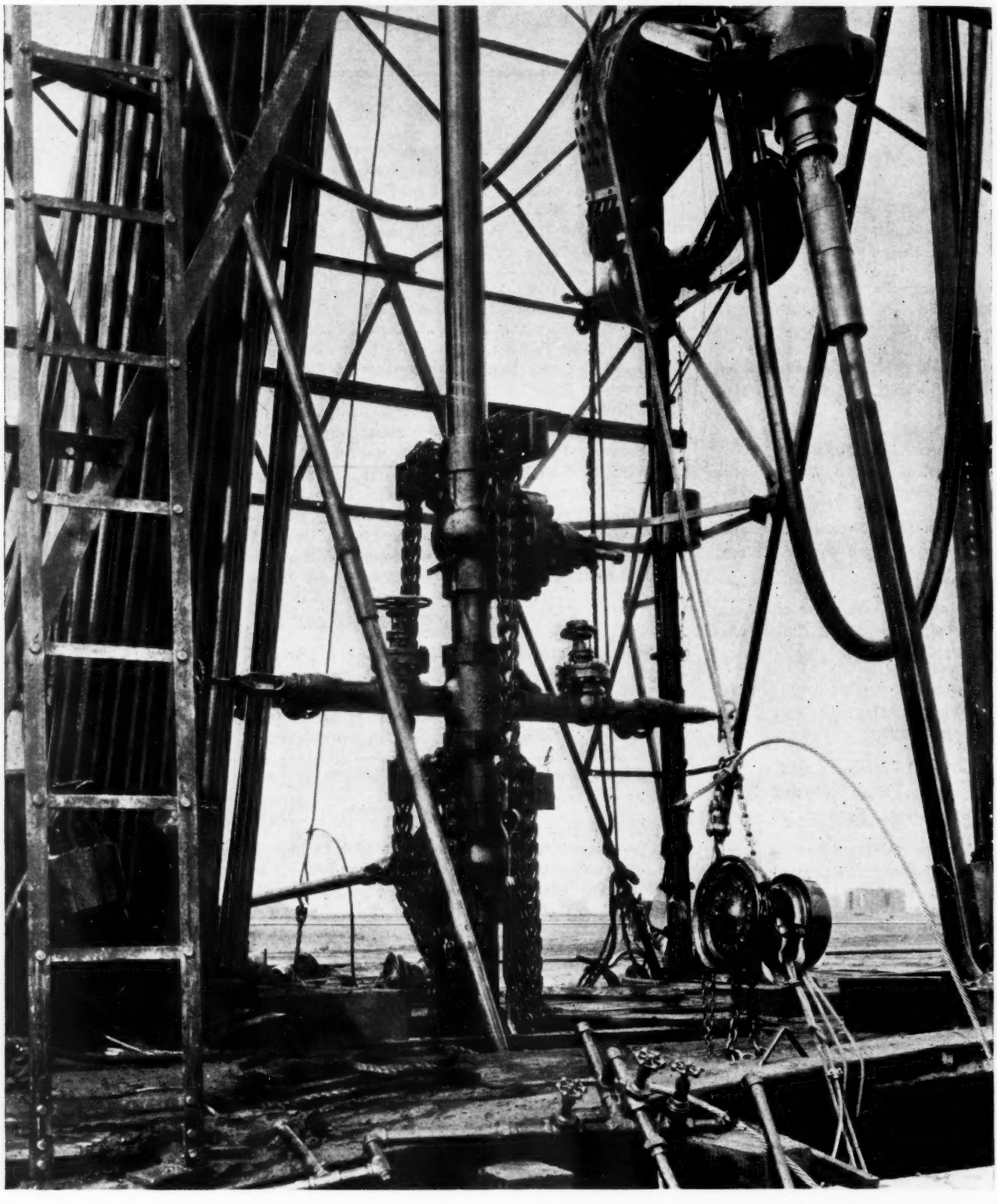
These Fittings Tamed Wild Mary Sudik



DANGER to life and property spurred the efforts to shut in the wild Mary Sudik well of the Indian Territory Illuminating Oil Co., in the Oklahoma City field, which blew in March 26 and was finally brought under control April 6, after spouting oil over the landscape at the rate of from 20,000 to 30,000 barrels a day.

In the assembly of control fittings, illustrated above, a feature was a special 7-inch die nipple. When the assembly was swung over the open casing six inches of thread were cut in the casing with the die to engage the control valves. The assembly was anchored with chains and steel straps to the casing.

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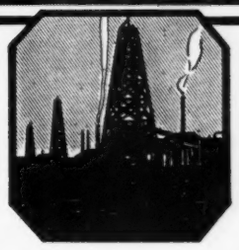

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Vol. 22 **CLEVELAND, April 16** **No. 16**

Gasoline Demand, Estimated by States For 1930, Is 402,500,000 Barrels

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, April 14.

GASOLINE demand in the United States in 1930 will total approximately 16,905,588,000 gallons, or 402,514,000 barrels.

This forecast is based on the taxed gallonage of 1929 and the 1929 automobile registrations, figures for which have just been announced by the U. S. Bureau of Public Roads.

Taxable gasoline probably will attain a total of 15,350,273,000 gallons, or 90.8 per cent of the total U. S. demand. A table containing estimates of taxable gallonage by state is published herewith.

Export demand for U. S. gasoline, assuming a growth in 1930 proportionate to the 1929 growth in foreign demand, should reach 3,030,888,000 gallons or 72,164,000 barrels.

Total foreign and domestic demand will approximate 19,936,476,000 gallons or 474,678,000 barrels. This amount is 2,022,000 barrels less than the estimate of the committee on petroleum economics whose report was given out today by Secretary of the Interior Wilbur in Washington. Dr. Wilbur is chairman of the Federal Oil Conservation Board.

Not all of this demand will be available to domestic refineries. Perhaps 10,000,000 to 12,000,000 barrels will be imported. The 1929 imports of gasoline amounted to 8,868,000 barrels.

Facts brought out and comparisons made possible by the Bureau of Public Roads' statistics include:

1. Taxed gasoline gallonage in 1929, including estimates for Illinois and New York for part of the year when they did not have taxes, totaled 14,177,420,000 gallons, compared with total shipments from refineries and importers to domestic distributors of 15,617,784,000 gallons as reported by the U. S. Bureau of Mines.

2. Gain over 1928 taxed gallonage was 1,739,155,229 gallons, or 13.9 per cent, as compared with gain of 1,821,246,000 gallons, or 13.2 per cent, in domestic shipments as reported by the Bureau of Mines.

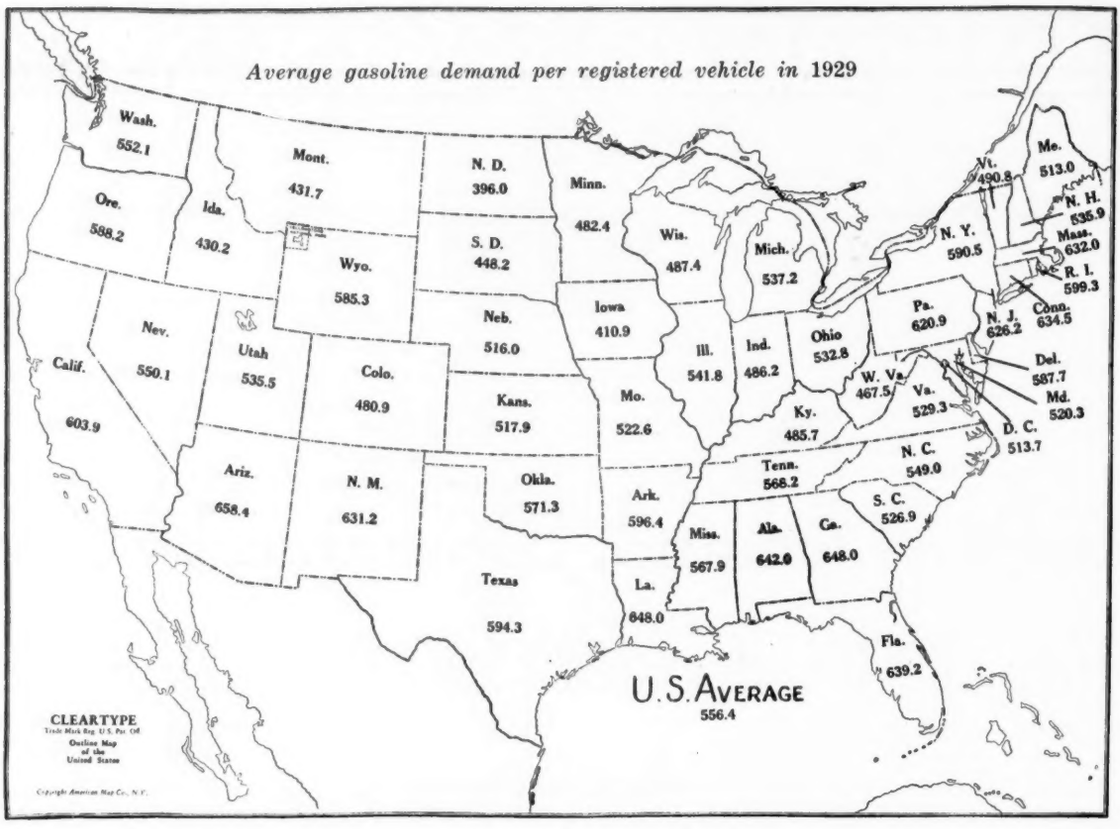
3. Total passenger car, truck bus,

(*Continued on Page* 30)

Estimated 1930 Gasoline Consumption, in Gallons, by States

(Exclusive of Tax Exempt Fuel)

Alabama	188,853,000	Maryland	176,478,000	Oregon	164,867,000
Arizona	73,915,000	Massachusetts	549,421,000	Pennsylvania	1,105,550,000
Arkansas	144,978,000	Michigan	793,405,000	Rhode Island	82,963,000
California	1,250,291,000	Minnesota	367,077,000	South Carolina	125,947,000
Colorado	150,662,000	Mississippi	143,016,000	South Dakota	94,583,000
Connecticut	214,294,000	Missouri	407,460,000	Tennessee	218,809,000
Delaware	33,476,000	Montana	64,071,000	Texas	845,178,000
Florida	218,906,000	Nebraska	223,281,000	Utah	64,633,000
Georgia	247,280,000	Nevada	19,015,000	Vermont	47,466,000
Idaho	53,136,000	New Hampshire	60,134,000	Virginia	213,532,000
Illinois	907,530,000	New Jersey	546,376,000	Washington	256,200,000
Indiana	432,305,000	New Mexico	54,211,000	West Virginia	130,049,000
Iowa	333,378,000	New York	1,393,881,000	Wisconsin	400,075,000
Kansas	314,412,000	North Carolina	270,879,000	Wyoming	36,880,000
Kentucky	169,261,000	North Dakota	77,605,000	District of Columbia	85,476,000
Louisiana	187,774,000	Ohio	974,776,000		
Maine	97,932,000	Oklahoma	338,596,000	Total	15,350,273,000



Distribution of 1929 Motor Vehicle Registrations

State	Passenger Cars, Taxis, and Busses (1)	Trucks and Road Tractors	Motor-cycles	Trailers (3)	Tax Exempt Public Cars State, City, County (3)	U. S. Cars (1)	Dealers' Licenses
Alabama	247,701	37,832	704	3,024	869	167	4,712
Arizona	98,327	10,686	396	1,249	1,173	176	182
Arkansas	193,396	39,732	400	2,808	919	39	515
California	1,760,308	214,033	9,628	42,899	15,005	1,217	14,000
Colorado	274,988	28,501	1,142	159	....	283	3,684
Connecticut	278,057	50,006	2,314	324	2,068	71	4,073
Delaware	44,728	10,232	308	389	....	44	684
Florida	288,684	57,293	1,104	900	3,788	75	1,906
Georgia	310,362	48,543	1,138	2,597	....	934	....
Idaho	104,398	13,676	355	485	1,092	103	466
Illinois	1,411,753	203,335	6,055	5,068	....	979	4,605
Indiana	741,366	125,349	2,983	10,407	4,965	3,184	2,794
Iowa	714,919	69,531	1,650	528	3,461	44	2,483
Kansas	507,529	73,694	1,178	360	2,470	192	2,784
Kentucky	298,716	34,132	727	....	1,916	90	1,158
Louisiana	234,565	46,303	600	8,000	....	209	456
Maine	147,962	36,544	1,258	1,652	1,467	64	1,151
Maryland	281,034	38,839	1,986	876	....	1,969	7,231
Massachusetts	719,436	98,268	5,568	556	900	556	3,094
Michigan	1,219,158	175,944	3,985	31,577	....	371	2,282
Minnesota	630,703	99,696	1,900	4,783	1,304	252	2,160
Mississippi	217,362	32,649	204	4,321	....	74	5,567
Missouri	671,237	85,443	1,893	2,686	1,604	311	2,686
Montana	115,285	25,102	234	....	....	229	537
Nebraska	375,946	42,280	972	6,515	1,101	226	3,584
Nevada	25,302	6,613	95	273	468	42	119
New Hampshire	94,900	13,980	1,263	635	....	22	561
New Jersey	698,959	133,373	6,531	2,424	7,173	708	3,418
New Mexico	76,000	2,374	203	509	820	156	208
New York	1,922,068	341,191	13,527	8,232	17,499	1,666	5,039
North Carolina	430,651	52,951	1,298	3,584	7,092	429	7,614
North Dakota	162,092	25,954	230	.....	.....	3	869
Ohio	1,560,182	206,432	9,180	15,000	10,843	2,362	29,298
Oklahoma	510,401	60,390	1,196	.....	4,725	530	3,923
Oregon	247,131	21,876	1,694	1,308	1,483	141	603
Pennsylvania	1,515,875	217,408	13,375	5,067	1,057	1,383	29,599
Rhode Island	114,010	19,999	917	87	837	56	330
South Carolina	205,683	25,591	451	2,048	3,017	91	628
South Dakota	181,419	22,780	207	.....	999	85	1,110
Tennessee	329,697	32,734	1,203	.....	4,377	132	711
Texas	1,165,150	182,957	4,016	16,260	.....	2,505	4,423
Utah	95,661	17,000	525	.....	1,200	173	.....
Vermont	84,471	8,559	487	280	.....	28	365
Virginia	328,525	58,680	2,141	966	3,514	1,141	4,561
Washington	379,995	62,346	2,403	2,986	4,349	637	5,109
West Virginia	228,715	40,173	1,397	725	2,388	33	11,854
Wisconsin	689,447	104,055	2,723	497	943	92	3,138
Wyoming	51,880	8,800	92	.....	356	209	338
District of Columbia	135,455	15,995	1,009	.....	1,586	837	2,107
Total 1929	23,121,589	3,379,854	114,845	193,044	118,828	(4)33,179	(2)188,719
Total 1928	21,379,125	3,113,999	117,946	148,169	103,618	(4)33,179	86,734
Per cent increase in 1929	8.1	8.5	—2.6	30.3	14.7	....	....

Notes:—(1) Taken from U. S. Budget of 1925, latest available but probably showing registration much lower, than actual present registration. (2) Increase evidently due to change in form of dealer registration in some states, particularly Ohio, Pennsylvania and West Virginia. (3) Some states don't register trailers or public cars. (4) Includes 7859 "cars-at-large", not allocated to any state.

The Editors' Viewpoint

National Petroleum News

Where Gasoline Stocks Grow the Fastest

AN ANALYSIS of the 1930 gasoline market by states, shown in detail in a special article in this issue of NATIONAL PETROLEUM NEWS, when studied in relation to gasoline production by the principal refining districts of the country, indicates that large increases in stocks of gasoline have been in those districts which produce gasoline without regard to the demands of their natural market.

This might seem such an obvious conclusion as to hardly warrant comment, except for the fact that refiners in some districts the last few years have gone far outside their own territories to place their gasoline on the market in competition with gasoline from other districts.

With exceptionally cheap transportation by water, and in the case of a practically standard commodity, such as gasoline, it might seem that refiners with the lowest crude and manufacturing costs could market their products without regard for economic territories. However, there seems to be a sales problem involved, the importance of which has been underestimated perhaps.

In the states of the east coast for example, from Maine to Florida, 16 states and the District of Columbia, figures published elsewhere in this issue indicate a market for something over 6,000,000,000 gallons of gasoline this year. Of this market east coast refiners, producing at the rate of January and February throughout the year, which rate is low, would supply around 2,600,000,000 gallons, or less than half the normal market. However, Texas gulf coast and Louisiana gulf coast refiners, producing at the rate of 3,900,000,000 gallons in 1930, on the basis of January and February operations, will supply a good part of this market, and a large part of the surplus from California will find its destination in this east coast territory and even farther west, as well as a large volume refined in the West Indies from Venezuelan crude.

With the competition of these three outside refining sources of supply, using low cost water transportation, and probably having lower manufacturing costs, east coast refiners in 1929 accumulated an increase in gasoline stocks of about 9 per cent, less than the increase in either of the two competing domestic refining districts.

Pacific Coast territory, including the seven states of Washington, Oregon, California, Nevada, Idaho and Arizona, on the basis of NATIONAL PETROLEUM NEWS estimates, represents a gasoline market for about 2,000,000,000 gallons in 1930. California refineries, operating throughout 1930 on the basis of January and February production, will turn out over 3,500,000,000 gallons of gasoline, far in excess of their economic market requirements. This same condition existed throughout 1929 and that year California gasoline stocks in refiners' hands grew from about 9,000,000 barrels to over 14,500,000 barrels, a gain of about 60 per cent.

The Gulf Coast refiners, virtually at the dooryard of the East Coast territory, increased their stocks 18 per cent.

The four states of Ohio, Michigan, Indiana, and Illinois represent a market for about 3,500,000,000 gallons of gasoline in 1930, it has been estimated. Refineries in these states, which are probably the most highly competitive gasoline market in the country because of their geographical relation to districts of production, will supply 2,600,000,000 gallons if they continue to operate at their January-February rate of production. Their rate of increase in gasoline stocks during 1929 was 10 per cent for the year.

Oklahoma, Kansas and Missouri refineries have seen their market boundary shrink considerably the last five years or so; but they have cut their production back to offset this, in part at least. The states of Oklahoma, Kansas, Missouri, Nebraska and Iowa, which might be called the heart but not the entirety of the natural market for this district, will consume somewhere around 1,800,000,000 gallons of gasoline in 1930. These refiners, again assuming they produce through the year at the rate of their January and February operations, will make about 2,400,000,000 gallons of gasoline. About the same conditions applied in 1929 and their stocks increased about 12 per cent.

All told for the year, the NATIONAL PETROLEUM NEWS estimate indicates an increase in gasoline demand of about 9 per cent, the same rate of gain as was estimated earlier in the year. This is not as large a rate of increase as the industry has been accustomed to. Refinery capacities are flexible enough that it would be easy to meet this demand without drawing on stocks for the year as a whole.

Unless the various refining companies with the gasoline market by states for the rest of the year before them, as provided by data in this issue, figure what portion of that general market they are entitled to and govern their manufacturing operations accordingly, this might happen.

Laxness in Smoking at Stations

FAMILIARITY breeds contempt, as much with a possible hazard to personal safety, as with anything else.

A few years ago signs were prevalent at service stations calling attention of the patron to the danger of smoking while his car was being served with gasoline. Station operators were told not to fill cars while the driver or someone else in the car was smoking. There were strict rulings against operators smoking at any time while on duty. It was insisted that patrons shut off their motors while gasoline was being dispensed.

Considerable laxness has come about in these matters, today, observations will show. In Detroit the fire marshal issues orders to station attendants to refuse service to motorists who are smoking in their cars or who leave their engines running.

(*Continued from Page* 27)

and taxicab registration of 26,501,-443, a gain of 2,008,319 or 8.2 per cent over 1928 registration.

4. An average of 556.4 gallons of gasoline consumed by the average motor vehicle registered in 1929, compared with an average of 522.3 gallons per motor vehicle in 1928, an increase of 34.1 gallons per vehicle. Publicly owned and U. S. government cars and trucks are not included in the average.

5. Gasoline taxes in 1929 amounted to $431,636,454, an increase of $126,-402,612 or 41.4 per cent over 1928 taxes. These sums are net, refunds on gasoline having been deducted.

6. Automobile registration fees in 1929 amounted to $347,843,543, an increase of $25,213,518, or 7.8 per cent, over the 1928 fees.

7. Total levies against motor vehicle owners, exclusive of personal property taxes, bridge tolls, traffic law violation fines, and other incidentals, amounted to $779,479,997. This sum was $151,616,130, or 24.1 per cent, more than 1928 levies.

8. Cost of collecting gasoline taxes in 36 states was $857,703, of which sum $778,178 was taken directly from the gasoline tax receipts by 30 states and $79,525 from state general funds by six states. Twelve states and the District of Columbia did not report how collections were paid for. This compares with $17,402,798 cost of collecting registration fees in 42 states and District of Columbia and of administering the registration laws.

9. The gain in passenger car, taxicab and bus registration was 8.1 per cent over the 1928 registrations and in trucks and road tractors 8.5 per cent.

10. Number of motorcycles decreased 2.6 per cent, and number of trailers—not consumers of gasoline—increased 30.3 per cent.

The average consumption of gasoline has steadily increased the last four years. In 1926 the average was 455.4 gallons per registered vehicle; in 1927, 515.4 gallons, in 1928, 522.3 gallons, and in 1929, 556.4 gallons.

Several reasons may be offered for the steady increase. Perhaps the leading reason is the growth of motor transportation of both freight and passengers. Busses and trucks, being large consumers of motor fuel, undoubtedly have caused an important increase in average consumption per vehicle.

Good roads and closed bodies permitting all winter driving have contributed their share to the increase as cars are being driven nearer an 8000-mile average a year than 5000-mile average of a few years ago.

The highest averages for consumption continued to be in the south and California, although rates of consumption in the north Atlantic coast states were higher than the national average. Exemptions on gasoline not used on public roads brought down the average in some states; while gasoline used in airplanes, power boats, and the industrial arts brought up the averages in those states that do not exempt gasoline so used from taxation. An example of the latter class of state is

Taxed Gasoline Gallonages for 1929 Registrations; Average Fuel

State	Tax Rate 1929 Jan. 1	Tax Rate 1929 Dec. 19	Net Gallons Taxed 1929 Gallons	1928 Gallons	1929 Change Gallons	1929 Change Per cent	Automobile Registrations Private and Commercial Vehicles 1929	1928	1929 Change	1929 Change Per cent
Alabama	4	4	(4)178,162,903	162,438,774	15,724,129	+ 9.7	285,533	269,519	16,014	+ 6.0
Arizona	4	4	63,995,783	50,455,046	13,540,737	+26.8	109,013	94,372	14,641	+15.5
Arkansas	5	5	133,620,566	106,147,481	27,473,085	+25.9	233,128	214,931	18,197	+ 8.5
California	3	3	1,139,736,244	985,558,973	154,177,271	+15.6	1,974,341	1,799,890	174,451	+ 9.7
Colorado	3	4	141,466,891	130,707,467	10,759,424	+ 8.2	303,489	284,867	18,622	+ 6.5
Connecticut	2	2	202,354,590	173,437,589	28,917,001	+16.7	328,063	309,792	18,271	+ 5.9
Delaware	3	3	31,198,248	26,678,310	4,519,938	+16.9	54,960	51,210	3,750	+ 7.3
Florida	5	6	223,373,467	224,704,496	—1,331,029	— 0.6	345,977	352,961	—6,984	— 2.0
Georgia	4	6	219,609,473	206,137,161	13,472,312	+ 6.5	358,905	318,856	40,049	+12.6
Idaho	4	4	48,658,984	47,096,637	1,562,347	+ 3.3	118,074	108,154	9,920	+ 9.2
Illinois	0	3	(1)845,000,000	(3)726,200,000	118,800,000	+16.3	1,615,088	1,504,359	110,729	+ 7.4
Indiana	3	4	410,936,759	372,584,968	38,351,791	+10.3	866,715	823,806	42,909	+ 5.2
Iowa	3	3	311,859,516	284,520,934	27,338,582	+ 9.6	784,450	733,466	50,984	+ 6.9
Kansas	2	3	288,716,546	269,742,067	18,974,479	+ 7.0	581,223	533,799	47,424	+ 8.9
Kentucky	5	5	154,717,831	134,835,629	19,882,202	+14.7	332,848	304,231	28,617	+ 9.4
Louisiana	2	4	176,645,631	169,046,556	7,599,075	+ 4.5	280,868	264,293	16,575	+ 6.3
Maine	4	4	91,610,422	79,011,319	12,599,103	+15.9	184,506	172,638	11,868	+ 6.9
Maryland	4	4	157,429,197	135,646,826	21,782,371	+16.1	319,873	285,311	34,562	+12.1
Massachusetts	2	2	487,940,778	(3)433,720,000	54,220,778	+12.5	817,704	726,295	91,409	+12.6
Michigan	3	3	710,300,302	611,161,335	99,138,967	+16.2	1,395,102	1,249,221	145,881	+11.7
Minnesota	2	3	338,631,771	288,404,998	50,226,773	+17.4	730,399	673,573	56,826	+ 8.4
Mississippi	5	5	140,902,401	136,334,223	4,568,178	+ 3.3	250,011	246,242	3,769	+ 1.5
Missouri	2	2	384,033,575	347,411,433	36,622,142	+10.5	756,680	712,965	43,715	+ 6.1
Montana	3	5	57,514,249	56,113,461	1,400,788	+ 2.5	140,387	126,035	14,352	+11.4
Nebraska	2	4	208,869,358	197,058,187	11,811,171	+ 6.0	418,226	391,355	26,871	+ 6.9
Nevada	4	4	16,307,535	13,279,660	3,027,875	+22.8	31,915	27,376	4,539	+16.6
New Hampshire	4	4	56,676,294	47,079,932	9,596,362	+20.4	108,880	102,644	6,236	+ 6.1
New Jersey	2	2	498,063,808	422,346,478	75,717,330	+17.9	832,332	758,430	73,902	+ 9.7
New Mexico	5	5	45,479,332	36,738,005	8,741,327	+23.8	78,374	65,737	12,637	+19.2
New York	0	2	(2)1,283,500,000	(3)1,100,000,000	183,500,000	+16.7	2,263,259	2,083,942	179,317	+ 8.6
North Carolina	4	5	260,210,528	244,675,269	15,535,259	+ 6.3	483,602	464,376	19,226	+ 4.1
North Dakota	2	3	71,591,708	73,973,434	—2,381,726	— 3.2	188,046	173,525	14,521	+ 8.4
Ohio	3	4	910,154,885	829,523,293	80,631,592	+ 9.7	1,766,614	1,649,699	116,915	+ 7.1
Oklahoma	3	4	314,388,292	279,996,597	34,391,695	+12.3	570,791	529,843	40,948	+ 7.7
Oregon	3	3	(5)152,090,900	144,284,704	7,806,196	+ 5.4	269,007	248,118	20,889	+ 8.4
Pennsylvania	3	4	1,047,914,175	733,268,795	314,645,380	+42.9	1,733,283	1,642,207	91,076	+ 5.5
Rhode Island	2	2	77,826,879	59,116,396	18,710,483	+31.6	134,009	125,698	8,311	+ 6.6
South Carolina	5	6	118,038,130	110,364,802	7,673,328	+ 6.9	231,274	216,805	14,469	+ 6.7
South Dakota	4	4	88,644,138	78,965,809	9,678,329	+12.2	204,199	191,374	12,825	+ 6.7
Tennessee	3	5	194,497,225	171,153,333	23,343,892	+13.6	362,431	322,137	40,294	+12.5
Texas	2	4	761,421,692	681,135,373	80,286,319	+11.8	1,348,107	1,214,297	133,810	+11.0
Utah	3½	3½	56,546,967	47,577,166	8,969,801	+18.8	112,661	98,541	14,120	+14.3
Vermont	3	4	43,990,554	37,311,088	6,679,466	+17.9	93,030	86,231	6,799	+ 7.9
Virginia	5	5	197,898,821	174,800,793	23,098,028	+13.2	387,205	360,545	26,660	+ 7.4
Washington	2	3	233,333,570	210,325,734	23,007,836	+10.9	442,341	402,875	39,466	+ 9.8
West Virginia	4	4	121,654,788	107,547,068	14,107,720	+13.1	268,888	251,556	17,332	+ 6.9
Wisconsin	2	2	374,251,957	342,837,969	31,413,988	+ 9.2	793,502	742,135	51,367	+ 6.9
Wyoming	3	4	34,242,816	31,810,563	2,432,253	+ 7.6	60,680	56,336	4,344	+ 7.7
Dist. of Columbia	2	2	71,409,032	63,157,367	8,251,665	+13.1	151,450	126,556	24,894	+19.7
Total	..	..	14,177,420,000	12,438,264,771	1,739,155,229	+13.9	26,501,443	24,493,124	2,008,319	+ 8.2

Notes:—(1) Illinois tax gallonage 388,659,266 for last five months; first seven months estimated. (2) New York tax gallonage 962,601,285 for last eight months; first four months estimated. (3) Estimated at higher figure than estimated by Bureau of Roads in view of 1929 experience. (4) Includes 1,075,385 gallons not previously reported. (5) Includes 4,025,392 gallons not previously reported.

Massachusetts where power boats, of which there are thousands, burn taxed motor fuel.

The largest increase in gasoline consumption in 1929 was in Pennsylvania, the tax returns indicate. The gain was 314,645,380 gallons or 42.9 per cent. Although tax returns do not reveal the reason, it is probable that Pennsylvania's new tax law resulted in a more complete collection of taxes than in previous years. Beginning the middle of last year, dealers in Pennsylvania were required to post heavy bonds to guarantee payment of gasoline taxes. The requirement was so heavy that a great many dealers were unable to meet it and were forced to close up. Those that remained in business were probably more reliable and not inclined to evade tax payment.

The Pennsylvania gasoline tax law is the only one of its kind in the country. Instead of the refiner or jobber laying the tax, the dealers pay it. Because there are thousands of dealers, collection has been more difficult and far more expensive than in states where a few hundred jobbers or refining companies pay the taxes. Pennsylvania collection last year cost $145,825 almost three times the next highest collection cost, that of Missouri.

Total consumption of gasoline was less in two states in 1929 than in 1928. These states are North Dakota and Florida. Demand was down 2,381,726 gallons net or 3.2 per cent in North Dakota, and 1,331,029 gallons or 0.6 per cent in Florida. Florida demand has declined each year since 1925, the time of the boom.

Indications are that, under normal conditions, demand should turn upward in North Dakota this year but that a small decline may come in Florida. However, demand has been better in Florida the early months of 1930 than early last year, but it is yet too early to assume the downward trend has been halted. There is a good chance that the statistics may be upset, just as total 1929 demand upset all predictions made a year ago.

Gallonage in 1929 was largest in New York, the state which has the most motor vehicles. California was a close second, Pennsylvania third, and Ohio fourth. Indications are the same relationship will prevail this year.

Of the total $431,636,454 gasoline taxes collected, $778,178 was applied directly to collection of the taxes. A large percentage of the balance went into highway construction and maintenance, or was applied on bonds issued for highway construction. Three states, however, paid for public schools out of gasoline tax money. This diversion was as follows: Florida $2,245,538, Georgia $1,457,454 and Texas $5,579,373, a total of $9,282,665.

The Bureau of Public Roads' report shows $297,967,756 of the gasoline taxes went on state roads, $85 113,708 on local roads, $14,548,106 on city streets, and $23,371,785 on highway bonds. It is probable some money from the first two items was applied on city streets which are designated as county or state roads.

Of the registration fees collected, $17,402,798 was applied on collection or administration, $223,292,969 on state roads, $66,861,364 on local roads, $1,172,648 on city streets, $33,183,473 on highway bonds and $5,930,291 for miscellaneous purposes. The largest item on the last mentioned classifica-

and 1930; Auto Consumption

Average 1929 Registra.	Avg. Gasoline Consumption Per Vehicle in Gallons 1929	1928	State
277,526	642.0	633.2	.... Alabama
97,192	658.4	575.2	..... Arizona
224,029	596.4	503.7	..... Arkansas
1,887,115	603.9	564.3	.... California
294,178	480.9	472.4	..... Colorado
318,927	634.5	586.6	... Connecticut
53,085	587.7	542.6	.... Delaware
349,469	639.2	601.1	..... Florida
338,880	648.0	665.5	..... Georgia
113,114	430.2	449.6	..... Idaho
1,559,723	541.8	493.4	..... Illinois
845,260	486.2	455.1	..... Indiana
758,958	410.9	395.8	..... Iowa
557,511	517.9	520.9	..... Kansas
318,539	485.7	457.2	..... Kentucky
272,580	648.0	651.1	.... Louisiana
178,572	513.0	469.9	..... Maine
302,592	520.3	482.6	.... Maryland
771,999	632.0	610.7	..... Mass.
1,322,161	537.2	508.4	.... Michigan
701,986	482.4	436.9	.... Minnesota
248,126	567.9	587.2	... Mississippi
734,822	522.6	497.9	.... Missouri
133,211	431.7	470.0	.... Montana
404,790	516.0	515.0	.... Nebraska
29,645	550.1	499.7	..... Nevada
105,762	535.9	474.0	.. New Hamp.
795,381	626.2	574.3	.. New Jersey
72,055	631.2	587.7	.. New Mexico
2,173,600	590.5	547.0	... New York
473,989	549.0	546.8	...N. Carolina
180,785	396.0	442.6	....N. Dakota
1,708,156	532.8	515.2	..... Ohio
550,317	571.3	542.1	.... Oklahoma
258,562	588.2	585.7	..... Oregon
1,687,745	620.9	458.7	..... Penna.
129,853	599.3	485.1	..Rhode Island
224,039	526.9	530.0	...S. Carolina
197,786	448.2	437.6	.....S. Dakota
342,284	568.2	555.0	... Tennessee
1,281,202	594.3	585.7	..... Texas
105,601	535.5	494.3	..... Utah
89,630	490.8	450.2	..... Vermont
373,875	529.3	500.7	..... Virginia
422,608	552.1	534.2	... Washington
260,222	467.5	432.4	...W. Virginia
767,818	487.4	476.0	... Wisconsin
58,508	585.3	587.5	..... Wyoming
139,003	513.7	530.2	Dist. of Col.
25,497,283	556.4	522.3	..... Total

What Car Owners Pay to Use the Highways

(These Amounts Are *Exclusive* of Personal Property Taxes, Bridge Tolls, Fines, and Other Miscellaneous Public Levies)

State	Net Gasoline Tax Receipts, License Fees 1929	1928	Registration, Drivers' and Dealers' Fees 1929	1928	Total Net Receipts from Car Owners 1929	1928
Alabama	$7,105,009	$6,614,297	$3,736,380	$3,474,065	$10,841,389	$10,088,362
Arizona	2,559,835	2,018,238	748,565	565,806	3,308,400	2,584,044
Arkansas	6,681,029	5,382,782	4,212,161	3,786,004	10,893,190	9,168,786
California	34,192,087	29,566,769	10,489,068	9,292,301	44,681,155	38,859,070
Colorado	5,218,064	3,921,224	1,835,386	1,790,183	7,053,450	5,711,407
Connecticut	4,097,175	3,511,675	7,992,755	7,373,589	12,089,920	10,885,264
Delaware	935,947	800,349	1,023,440	928,916	1,959,387	1,729,265
Florida	12,231,336	11,257,617	4,959,129	4,935,995	17,190,465	16,193,612
Georgia	10,224,108	8,245,486	4,568,209	4,041,767	14,792,317	12,287,253
Idaho	1,946,359	1,884,023	1,787,467	1,626,949	3,733,826	3,510,972
Illinois	11,659,778	836,826	17,087,209	15,521,530	28,746,987	16,358,356
Indiana	15,610,540	11,177,549	6,253,424	5,751,781	21,863,964	16,929,330
Iowa	9,355,785	8,535,628	11,919,350	10,692,767	21,275,135	19,228,395
Kansas	8,171,205	5,394,841	5,697,306	5,394,448	13,868,511	10,789,289
Kentucky	7,742,564	6,743,224	5,381,302	4,725,258	13,123,866	11,468,482
Louisiana	6,978,651	3,380,931	4,523,634	4,383,634	11,502,285	7,764,565
Maine	3,708,682	3,192,384	3,030,128	2,763,598	6,738,810	5,955,982
Maryland	6,297,168	5,425,873	3,295,314	3,034,621	9,592,482	8,460,494
Massachusetts	9,758,816	.....	7,117,725	13,919,618	16,876,541	13,919,618
Michigan	21,312,929	18,334,840	23,212,316	20,056,848	44,525,245	38,391,688
Minnesota	8,892,125	5,768,100	10,846,926	10,101,785	19,739,051	15,869,885
Mississippi	7,176,126	5,696,553	2,963,381	2,814,150	10,139,507	8,510,703
Missouri	7,680,672	6,948,229	9,690,727	8,765,609	17,371,399	15,713,838
Montana	2,802,017	1,683,404	1,549,487	1,298,828	4,351,504	2,982,232
Nebraska	7,799,479	3,941,164	4,289,969	3,950,788	12,089,448	7,891,952
Nevada	652,301	531,186	296,881	249,111	949,182	780,297
New Hampshire	2,267,052	1,884,175	2,248,213	2,070,957	4,515,265	3,915,132
New Jersey	9,996,104	8,470,336	14,803,016	13,569,029	24,799,120	22,039,365
New Mexico	2,289,767	1,852,037	756,763	627,751	3,046,520	2,479,788
New York	19,087,392	.....	38,293,313	34,306,706	57,380,705	34,380,705
North Carolina	12,006,384	9,787,011	7,045,116	6,088,140	19,051,500	15,875,151
North Dakota	1,801,102	1,479,469	1,989,475	1,775,145	3,790,577	3,254,614
Ohio	34,082,188	24,885,699	12,860,453	11,840,258	46,942,641	36,725,957
Oklahoma	10,841,609	8,147,901	6,964,360	6,258,610	17,805,969	14,406,511
Oregon	4,542,602	4,008,259	7,644,226	6,969,221	12,186,828	10,977,480
Pennsylvania	35,757,816	21,998,064	29,264,695	27,113,777	65,022,511	49,111,841
Rhode Island	1,545,961	1,182,328	2,403,809	2,273,819	3,949,770	3,456,147
South Carolina	6,871,076	5,518,240	2,674,379	2,440,539	9,545,455	7,958,779
South Dakota	3,545,765	3,158,873	3,150,657	2,901,905	6,696,422	6,060,778
Tennessee	9,290,853	5,134,600	4,288,420	4,066,478	13,579,273	9,201,078
Texas	22,317,494	17,945,037	20,419,696	17,701,251	42,737,190	35,646,288
Utah	1,979,226	1,664,652	838,300	731,340	2,817,526	2,395,992
Vermont	1,703,091	1,118,882	2,339,782	2,090,960	4,042,873	3,209,842
Virginia	9,894,941	8,616,239	6,145,296	5,572,046	16,040,237	14,188,285
Washington	5,943,039	4,206,515	7,547,382	7,028,291	13,490,421	11,234,806
West Virginia	4,873,298	4,308,109	4,565,836	4,142,595	9,439,134	8,450,704
Wisconsin	7,485,039	6,856,759	11,780,703	10,774,707	19,265,742	17,631,466
Wyoming	1,296,299	954,317	647,200	572,570	1,943,499	1,526,887
D of C	1,428,181	1,263,148	665,914	473,981	2,094,095	1,737,129
Total	$431,636,454	$305,233,842	$347,843,543	$322,630,025	$779,479,997	$627,863,867
Increase in 1929	126,402,612	or 41.4%	25,213,518	or 7.8%	151,616,130	or 24.1%

tion was $3,710,350 appropriated to the general fund of New York City and probably used in street maintenance, although the specific use was not given in the report.

A few states pay for highway patrol from automobile registration fees. Several provided for tax and registration fee refunds out of last year's receipts.

Of the total collection of $779,479,997 taxes and fees, $745,511,809 was applied on highway and street construction and maintenance. If highway patrol costs and the New York city fund are included in the general highway funds, approximately three fourths of a billion dollars were raised from car owners directly last year for use of the country's roads, and almost $30,000,000, exclusive of personal property taxes was levied directly against them for general purposes.

In an accompanying table, the 1928 gasoline consumption estimates for Illinois, Massachusetts and New York made by the Bureau of Public Roads a year ago, have been revised upward in view of the data covering the time last year when those states had gasoline taxes. The bureau's estimates in light of later experience were evidently too low.

The 1930 estimates based on automoblie registrations are close to the average of estimates made by a group of oil company statisticians at the American Petroleum Institute meeting in Chicago last December. The average of 11 predictions made then before registration figures were available, was an increase of 8.34 per cent for this year. The prediction based on the registrations, is an 8.2 per cent increase.

With the exception of one year in the last six, predictions based on automobile registrations, have varied less than 5 per cent off the actual gallonage as revealed by Bureau of Mines domestic shipments reports and in most years the variance has been close to 1 per cent. The great exception was 1929, when domestic demand surpassed even the expectations of the most optimistic forecasters. In spite of the underpredictions of a year ago, refiners produced an excessive supply of gasoline.

The estimates presented here afford a mark at which to shoot. For some states the predictions may be high and for others low. One summer cloudburst may cause enough damage in some community to appreciably alter gasoline consumption and a sustained period of bad weather, which cannot be foretold, may ruin the best of calculations. Likewise sustained good motoring weather will mean an increase in demand above these estimates.

Late Market Changes

NEW ORLEANS—On April 15 Standard Oil Co. of Louisiana advanced tank wagon and service station prices of gasoline 1 cent throughout its territory.

Socony-Vacuum Oil Merger Necessary Today, Is Plea

CLEVELAND, April 15

DEVELOPMENTS of American and world petroleum markets make necessary the consolidation of the Standard Oil Co. of New York and the Vacuum Oil Co., those companies contend in an answer to the U. S. Government's petition that they be restrained from merging as a merger would violate the Standard Oil dissolution decree of 1911. The answer was filed April 12 in the United States district court at St. Louis, where the original dissolution suit was filed.

The two companies review the development and economic changes in the petroleum industry since the filing of the dissolution suit almost a quarter of a century ago. To show that consolidation of the two companies, whose businesses, it is alleged, are complementary, could not create a monopoly, the following percentages of business of the two companies in the United States and of the businesses of their competitors are included in the answer:

	Socony %	Vacuum %	Other Companies %
New crude production	4.4	0.1	95.5
Refining capacity	6.2	0.8	93.0
Gasoline	8.1	0.8	91.1
New crude production..	4.4	0.1	95.5
Refining capacity	6.2	0.8	93.0
Gasoline	8.1	0.8	91.1
Kerosene	8.2	0.04	91.8
Fuel, diesel, gas and furnace oils	7.1	0.3	92.6
Lubricating oils, greases	6.2	6.6	87.2
Miscellaneous products..	6.7	0.05	93.2

The business done by affiliated companies is included in the foregoing proportions, it was said in the answer.

It is pointed out that at the time of the dissolution Standard of New York was solely a marketing agency in New York and the six New England States, that it had no crude production, and inconsequential refining facilities. It did 85 per cent of the petroleum business in the seven states of its territory. By 1926 competition had so grown that the company did only 46 per cent and by 1929 the proportion had fallen to 34 per cent of the gasoline and kerosene trade and smaller percentages of other products.

It also was pointed out that in 22 western and southwestern states Standard of New York was now in competition with other companies formerly controlled by the Standard Oil Co. of New Jersey or subsidiaries of the present Standard of New Jersey. This expansion of marketing outlets accompanied the development by the company of crude production and refining facilities in the Mid-Continent, Texas and California.

In behalf of Vacuum it is pointed out that it has developed a nation-wide market for quality lubricants, particularly automobile oils; that it has not maintained filling station outlets for its oils except in a small area in western New York and Pennsylvania near its refineries, and that its market channels have been endangered by the closing to it of the outlets which have been or are being acquired by integrated companies which push their own lubricating oils instead of those of the Vacuum.

The effect of a consolidation in the United States is summarized as follows:

"By such union the full value of its (Vacuum's) specialized lubricating brands will be preserved and they will be made accessible through the use of Socony's present extensive filling stations facilities to those consumers who prefer them. On the other hand the union will tend to extend the competition of Socony in the industry by introducing its products in localities in which it is not now doing business.

"The nation-wide reputation of the Vacuum specialties will be of marked value in introducing Socony's gasoline in connection with these specialties in such localities, and the necessity for the protection of the Vacuum brands by affording them filling station facilities along with gasoline will furnish the united company an added inducement for it to extend its competition to gasoline in these localities."

A section of the answer is devoted to the foreign markets of the two companies, which, it is alleged, feel the need of uniting their complementary businesses and facilities to meet changing conditions in world markets.

The petition concludes with a plea that the government's petition be dismissed.

DALLAS—On April 15 Magnolia Petroleum Co. advanced tank wagon and service station prices of gasoline at Tulsa 1 cent, making new prices 16 cents and 20 cents respectively, including 4 cents state tax.

Above prices are not published in the tank wagon table at the back of this issue as they are effective April 15, and prices in that table are as of Monday, April 14.

What 1930 Oil Requirements Will Be; Report of Economics Committee

WASHINGTON, April 14

GASOLINE demand for 1930 of 476,700,000 barrels is forecast by the Committee on Petroleum Economics appointed by Secretary of the Interior Wilbur, chairman of the Federal Oil Conservation Board.

The committee of five geologists and petroleum economists, of which J. Elmer Thomas, Fort Worth, is chairman, was appointed to this task March 10. It made its report March 25. The report was made public here today.

Fuel oil demand for 1930 is forecast as 456,000,000 barrels by the committee. Demand for other products is put at 130,000,000 barrels.

"Our estimate of the supply of domestic crude oil required to meet this demand efficiently is 942,800,000 barrels, allowing for a moderate reduction in stocks of refined products," the committee stated in its letter of transmittal of the report to Secretary Wilbur.

"Our suggestion of a reasonable allocation of production requirements as between the larger producing states, adjusted so as to relate to the last nine months of 1930, is, in barrels per day: California, 610,000; Oklahoma, 655,000; Texas, 750,000; all others, 480,000; and from storage, 78,000."

In estimating gasoline demand for this year, its principal task, the committee considered three indeterminate variable conditions: number of automotive units in operation, industrial conditions, and the weather.

Domestic gasoline consumption the committee placed at 409,700,000 barrels for 1930, and exports were placed at 67,000,000 barrels. Total demand is thus estimated as 9 per cent larger than in 1929.

An error of only 1 per cent in the forecast rate of increase would amount to 4,370,000 barrels of gasoline, the committee pointed out, which, reflected back to domestic crude oil, represents a difference of 48,000 barrels daily in requirements. It says an error of 5,000,000 barrels could be compensated from gasoline stocks without affecting crude oil requirements.

The economic effect on gasoline production of the growing demand for gas and fuel oil from general industrial users was discussed at some length in the report. The tendency to increase the volume of gasoline through cracking appears to be pointing to a limit, the report said, unless there is an important reduction in the industrial consumption of gas and fuel oils.

"Full utilization of cracking facilities will tend to over-produce gasoline if increases continue in fuel oil consumption," said the report. "Conversely, the amount of crude necessary to meet the gasoline demand, with increasing cracking operations and growing supplies of natural gasoline, will tend to under-supply gas and fuel oil markets as now constituted.

"The statistical position of the oil industry in 1930 would seem to dictate a slowing down in the rate of increase in cracking to permit some reduction in gasoline inventories and our estimate for gasoline from cracking stills has been placed at 161,000,000 barrels. This may be altered somewhat by any changes in the price spreads between crude oil, charging stocks and gasoline, price having a notable influence on cracking operations.

"To the extent that price increases encourage the operation of cracking units the interests of conservation are served in two ways: the demand for crude is diminished and its higher uses are realized. Lower price levels on narrowing spreads tend to discourage cracking operations, call for more crude and provide a larger volume of fuel oil. This factor merits considerable attention because it is one of the most important economic influences affecting the industry today."

The output of natural gasoline, in view of the rapid growth of the natural gas industry, is likely to continue, the report goes on. The total 1930 supply is placed at 58,000,000 barrels, of which 53,000,000 barrels will be blended at refineries and 5,000,000 barrels sold direct.

Table 2.—Analysis of Demand Showing Method of Determining Domestic Crude Oil Requirement in 1930

(In millions of barrels)

(As reported by the Committee on Petroleum Economics)

		1927	1928	1929	1930 (Est.)	Per cent change 1930 from 1929
1.	Domestic consumption, gasoline	300.4	332.5	376.2	409.7	+ 8.9
2.	Exports, gasoline	44.3	52.9	61.2	67.0	+ 9.5
3.	Total demand, gasoline	344.7	385.4	437.4	476.7	+ 9.0
4.	Output, cracked gasoline	101.2	122.5	143.7	161.0	+12.0
5.	Natural, gasoline blended	33.2	36.5	46.7	53.0	+13.5
6.	Benzol blended	2.6	2.8	3.1	3.3	+ 6.5
7.	Imports, gasoline	5.0	4.2	8.9	14.0	+57.3
8.	Output, straight-run gasoline	197.0	219.2	245.0	240.4	— 1.9
9.	Total gasoline supply	339.0	385.2	447.4	471.7	+ 5.4
10.	Change in gasoline stocks	— 5.7	— 0.2	+10.0	— 5.0	.....
11.	Per cent recovery, straight-run gasoline	23.8	24.0	24.8	25.1	+ 1.2
12.	Crude oil charged to stills	828.8	913.3	987.7	957.8	— 3.0
13.	Crude oil exported, consumed as such, etc	54.7	50.6	47.0	54.0	+14.9
14.	Total crude oil required	883.5	963.9	1034.7	1011.8	— 2.2
15.	Less imported crude oil	58.4	79.8	78.9	69.0	—12.5
16.	Domestic crude oil required	825.1	884.1	955.8	942.8	— 1.4
17.	Domestic crude oil production	901.1	901.5	1005.6	.....	.....
18	Change in crude oil stocks	+76.0	+17.4	+49.8	.....	.....

Personnel of Committee

THE committee on petroleum economics appointed by Secretary Wilbur as chairman of the Federal Oil Conservation Board to inquire into and report on the probable 1930 requirements of petroleum and its products, was composed of:

J. Elmer Thomas, Fort Worth, chairman; Dr. Joseph E. Pogue, New York, secretary; H. W. Lowrie, Jr., Denver; Ray E. Collins, Tulsa, and H. P. Grimm, Los Angeles.

Mr. Collins and Mr. Grimm are the umpires on production in Oklahoma and California, respectively.

Table 1.—Estimated Demand for Gasoline

(As reported by the Committee on Petroleum Economics)

Year	Cars carried over from previous year	Production of cars in U. S.	Exports of cars	Total new cars added during year	Cars registered during year	Cars eliminated during year	Cars in use end of year	Average number cars in use during year	Consumption per car *b*	Domestic consumption of gasoline
	T	T	T	T	T	T	T	T	B	MB
1925.....	16,116	4,266	428	3,838	19,954	1,861	18,093	17,104	13.2	226.5
1926.....	18,093	4,301	393	3,908	22,001	1,803	20,198	19,145	13.8	264.9
1927.....	20,198	3,401	466	2,935	23,133	2,416	20,717	20,457	14.7	300.4
1928.....	20,717	4,359	583	3,776	24,493	2,472	22,021	21,369	15.6	332.5
1929.....	22,021	5,358	745	4,613	26,634	3,100*a*	23,534*a*	22,777*a*	16.5	376.2
1930*a*.....	23,534	4,250	600	3,650	27,184	2,800	24,384	23,959	17.1	409.7

T = Thousands of units (cars and trucks).
B = Barrels of 42 gallons.
MB = Millions of barrels.
a = Estimated.
b = Other uses of gasoline included in this ratio.

"Every 1,000,000 barrels of natural gasoline displaces 4,000,000 barrels of crude for straight-run operations and it has, therefore, an appreciable effect upon crude oil requirements, its influence likewise being along lines of conservation," the report sums it up.

Imports of gasoline, says the committee, are expected to increase 5,100,000 barrels, or 57 per cent, in 1930. It estimated that 14,000,000 barrels of gasoline would be brought into this country largely from Venezuela, which volume would represent 2.94 per cent of the total 1930 demand.

The committee stated that a reduction of gasoline stocks of 5,000,000 barrels could take place in 1930 without disturbing fuel oil commitments in any part of the country. The committee stated, however, that it had information to the effect that in California amounts of both fuel oil and gasoline were likely to be withdrawn from storage this year, which might increase the total withdrawal of gasoline stocks by more than 5,000,000 barrels.

After discussing the various sources of production of gasoline the report stated concerning stocks:

"The remaining demand for gasoline, not met by supply from the sources discussed above, must be supplied from stocks or from straight-run distillation of crude oil. Before determining the quantity of crude oil required to meet efficiently the total demand, consideration must be given to the question of how much gasoline can be withdrawn from inventories.

"The gasoline stocks carried over into 1930 were larger by 10,000,000 barrels, or 30 per cent, than the carry-over into 1929, which indicates that present stocks are excessive. Both evaporation and carrying charges represent a loss to the industry and to the public. Accordingly, it would seem desirable that they be reduced. From the point of view of necessary working reserves the evidence suggests a surplus of 10,000,000 to 15,000,000 barrels. Attention must be given, however, to the possible effect upon fuel oil stocks which would result from such a drastic reduction.

"Gasoline stocks can be liquidated by reducing crude run to stills. Every million barrels of gasoline derived from storage displaces 4,000,000 barrels of crude run to stills and reduces the output of fuel oil by 1,650,000 barrels. Using the approximate statistics available for fuel oil, it may be computed that a draft of 15,000,000 barrels on gasoline stocks, assuming the refining schedule as set up in Table 2, would involve a total withdrawal of about 42,000,000 barrels from fuel oil inventories."

In considering crude oil requirements to meet 1930 gasoline needs the committee used a recovery factor of straight-run gasoline from crude oil of 25.1 per cent, only slightly higher than the 1929 factor. The rate of increase in this factor is being checked, the committee said, by the tendency of refiners to make higher quality (lower end point) gasoline.

"Using this factor, the estimated quantity of gasoline needed from straight-run operations will require charges to stills of 957,800,000 barrels, or 2,624,000 barrels per day, a decrease of 3 per cent from the crude charged in 1929," stated the report. "No decrease would be necessary, however, if crude had not been overrun in 1929.

Imports of crude the committee estimates for 1930 at 69,000,000 barrels, as against 78,900,000 barrels in 1929, a decline of about 12.5 per cent. Deducting crude imports from crude required to run to stills gives the committee a requirement for domestic crude of 2,583,000 barrels a day.

The committee prepared a table summarizing the 1930 demand subdivided into the principal products. The various constituents of the sup-

Table 3.—Balance Sheet of All Oil Showing Effect of Limiting Crude Oil Production to the Requirement Estimated in Table 2

(In millions of barrels)

(As reported by the Committee on Petroleum Economics)

SUPPLY OF ALL OIL

	1927	1928	1929	1930 (Est.)
Crude produced in U. S.	901.1	91.04	1005.5	942.8*a*
Natural gasoline *c*	38.6	42.3	52.3	58.0
Benzol	2.6	2.8	3.1	3.3
Imports, crude oil	58.4	79.8	78.9	69.0
Imports, products	13.4	11.8	29.8	47.5
Total supply, all oil	1014.1	1038.1	1169.6	1120.6

DEMAND FOR ALL OIL

	1927	1928	1929	1930 (Est.)
Gasoline	344.7	385.4	437.4	476.7
Gas and fuel oil *b*	386.7	428.4	456.0	456.0
Kerosene	57.0	58.3	57.3	57.0
Lubricants	31.5	34.2	34.5	35.0
Crude—as such	60.6	50.5	48.1	53.0
Refinery losses	28.4	29.0	35.1	35.0
All others	35.1	29.6	33.6	38.0
Total demand, all oil	944.0	1015.4	1102.0	1150.7
Total supply, all oil	1014.1	1038.1	1169.6	1120.6
Change in stocks, all oil	+70.1	+22.7	+67.6	—30.1

a Estimated domestic crude oil requirement.
b All fuel oil figures are approximations because of limitations inherent in the statistics.
c Total output of natural gasoline including that blended at refineries and otherwise used.

in 1930

Per cent change	Exports of gasoline MB	Per cent change	Total gasoline consumption MB	Per cent change	Year
....	31.5	....	258.0	....	1925
+17.0	43.3	+31.5	208.2	+19.8	1926
+13.4	44.3	+ 2.3	344.7	+11.8	1927
+10.8	52.9	+19.4	385.4	+11.9	1928
+13.1	61.2	+15.7	437.4	+13.5	1929
+ 8.9	67.0	+ 9.7	476.7	+ 9.0	....*a*1930

T = Thousands of units (cars and trucks).
B = Barrels of 42 gallons.
MB = Millions of barrels.
a = Estimated.
b = Other uses of gasoline included in this ratio.

ply, such as crude, natural gasoline, benzol, and imported crude and refined oils were set forth. This summation showed an excess of 30,100,000 barrels demand over supply which excess would be taken from stocks. This is considered a "reasonable and desirable adjustment downward of a heavy inventory position," the committee reported.

"It may be pointed out, further," the committee wrote, "that it is within the economic reach of the California branch of the industry, because of the abundance of fuel oil stocks in that section, to create by restricted refinery operations a larger draft on fuel oil and gasoline stocks, and hence on stocks of all oil, than is indicated in our refinery schedule."

Concerning seasonal variations in demand for products it wrote:

"There is a decided monthly variation in the consumption of petroleum products which is reflected in refinery operations and likewise in crude demand from producers. Over a period of years there is a recognizable tendency through summer months of peak consumption to revise upward the estimates of annual demand, which frequently has led to an over-production of both crude and refined. Since the level daily average production figures here presented have taken account of the seasonal variation, these quotas can be followed without alteration and the peak demand filled from storage stocks."

In conclusion is summarized its beliefs as follows:

"The 1930 demand for gasoline is estimated to be 476,700,000 barrels, an increase of 9.0 per cent over the 1929 demand. This quantity of gasoline can be supplied from a domestic crude oil production of 942,800,000 barrels, or 2,583,000 barrels per day, if the output of cracked gasoline is 161,000,000 barrels and there is a moderate draft on stocks of gasoline and of fuel oil. This schedule calls for refinery runs of 957,800,000 barrels, or 2,624,000 barrels per day.

"The domestic crude oil requirement of 942,800,000 barrels, introduced into a balance sheet of total supply and demand, indicates that this quantity is sufficient to meet the expected demand for all oil, with a draft of 30,100,000 barrels on over-all stocks. The domestic crude oil requirement has been allocated to the principal producing areas for the last nine month of 1930 as follows, in thousands of barrels per day: California, 610; Oklahoma, 655; Texas, 750; all other, 480; from storage, 78, and total United States, 2,573."

Sinclair Settles With U. S. For Salt Creek Oil

WASHINGTON, April 14.—The Sinclair Crude Oil Purchasing Co. and the Mammoth Oil Co. have agreed to pay the United States $375,081.64 additional on account of royalty oil they took from the Salt Creek field from Jan. 1, 1928, to Oct. 21, 1928, under a renewal of a royalty oil contract of sales, originally made by then Secretary Fall. The original contract provided for a renewal, for five years, at the option of the Sinclair companies. They exercised the option and Secretary Work renewed the contract.

That renewal was later challenged as illegal and the government revoked it. Upon competitive bidding the contract was awarded to the White Eagle Oil Co., at 21.75 cents per barrel more than the Sinclair companies were obligated to pay. The government sued for the difference.

The litigation was ended by the government's agreement to accept the difference, the attorney general being satisfied that the White Eagle bid was the highest that could have been obtained for the royalty crude. A decree in favor of the government was entered in the federal court in Delaware with the consent of the Sinclair companies.

I. P. A. A. Completing Plans for Meeting

TULSA, April 12.—Preparations are being made to end the convention of the Independent Petroleum Association of America with a banquet. The meeting will be held in Fort Worth April 18 and 19. The first day's session will be devoted to formulating plans by the officers and directors and the public sessions will be held the following day.

Invitations have been sent to independent producers, refiners, marketers, royalty and supply men by the Texas division. In one of the letters, L. C. Turman, vice president, of Fort Worth, says:

"At this convention we will have the biggest independent producers in the world and they will tell you what is going to happen if we do not get a tariff on oil. Our leading producers of Texas will also be here and explain how we have all been put out of the oil business through monopoly and how we may get back in the business by appealing to our legislators at Austin in an effort to have laws passed that will give us fair play."

Accompanying this letter was a questionnaire card which the recipient was asked to fill out and return. It asked these questions:

"Do you favor a protective tariff on crude oil and its by-products that is now flooding the United States?

"Do you favor state legislation on crude oil, which gives equal rights to all?

"Do you believe in centralization and mergers of the Standard Oil companies creating monopolies?

"Do you favor unitization operation plans of the major oil companies?"

Formal program has not been completed. Many of those who plan to attend will be present on the first day, although the special trains from Tulsa and Oklahoma City will leave on the night of the 18th.

Table 4.—Allocation of 1930 Estimated Crude Oil Requirement to Principal Producing Areas

(In thousands of barrels per day)

(As reported by the Committee on Petroleum Economics)

State	1 Distribution 1929 Demand Per cent	2 Allocation 1930 Demand Per cent	3 Allocation 1930 Demand Daily avg.	4 Estimated Production 1930 to April 1st	5 Adjusted Allocation Last nine months 1930
California	26.80	24.39	630	694	610
Oklahoma	26.00	25.24	652	644	655
Texas	29.87	29.81	770	832	750
All Others	17.33	18.27	472	443	480
From Storage	.....	2.29	59	....	78
Total	100.00	100.00	2,583	2,613	2,573

Proposes Making Trade Practice Codes Contracts in Effect

WASHINGTON, April 14

A BILL has been prepared by Rush C. Butler, of Chicago, for consideration by the commerce committee of the American Bar Association with a view to presentation to Congress, giving a trade practice agreement virtually the force and effect of a contract between the signers when it has been approved by the Federal Trade Commission and also giving it a definite standing in the courts.

Butler is an ardent supporter of the law the trade body administers. His proposal is not in derogation of the practice of the commission in respect to the trade practice agreement. The proposition upon which Mr. Butler has been working was discussed at a meeting of the bar association committee in New York last week. Mr. Butler believes enactment of the bill would give the trade practice agreement a definite status and a measure of sanction not now conceded to it.

The Butler bill proposes that, when a trade agreement has been approved by the commission, "and so long as its approval remains in effect, or in the event no order of the commission or any court of competent jurisdiction shall be in force suspending the taking effect of such contract or ordering the parties thereto to cease and desist from carrying out and performing the terms thereof, no prosecution shall be instituted against any party to said contract for any criminal violation of the anti-trust laws arising out of such contract or any act in performance thereof; nor shall any person who shall have sustained injury in his business or property by reason of or as a result of the performance of such contract be entitled to recover threefold damages but only the actual damages by him so sustained and the cost of the suit, including a reasonable attorney's fee."

The fundamental thought back of the Butler bill is that, when an industry makes a trade practice agreement, it shall obtain assurance from the approval given by the commission that it will not be overturned lightly by a court, as a violation of the anti-trust laws or, if overturned by the courts, the penalty for the violation of the anti-trust law shall be reduced to the simple damages an aggrieved party can prove.

While Mr. Butler has not explained the matter in Washington, the bill is taken to mean that if, as claimed by President Kingsbury of the Standard Oil Co. of California, the things done in California to prevent further price warring in that state are in accordance with the oil industry's trade practice agreement and are found to be in violation of the anti-trust laws no one claiming and proving damage will be able to recover more than the damages he is able to prove. Under the anti-trust laws he is able to recover threefold damages.

The plan evoked criticism at the meeting in New York. It is believed it will be opposed by the Department of Justice.

S.O. Indiana May Buy McMan Properties

By Telegraph

TULSA, April 15.—Negotiations by the Standard Oil Co. of Indiana to purchase holdings of the McMan Oil & Gas Co., revealed at the end of last week by principals had not been concluded today. It was thought that the deal would be consummated soon. The purchase price will be somewhere between $17,000,000 and $20,000,000, dependent upon whether the price is paid in cash or stock, the lower figure prevailing if Indiana stock is taken. It is understood that the principals in the McMan Co. prefer stock. Significance of the purchase is the Indiana Co.'s steady creation of a strong producing position in the Mid-Continent and Texas.

The best of the McMan holdings are in the latter state. If completed this will be the second large sale by McMan. In 1916 it sold its holdings to the Magnolia Petroleum Co. for $39,000,000.

TexasAgain Led in Output Of Crude in 1929

HOUSTON, April 13.—Out of approximately one billion barrels of crude petroleum produced in United States fields in 1929 the state of Texas contributed nearly 300,000,000 barrels, Paul Wagner, manager of the Houston office of NATIONAL PETROLEUM NEWS, told the Kiwanis Club in a short industrial talk, recently.

Quoting from United States Bureau of Mines reports, he said that for the second consecutive year, Texas led all oil producing states. It was approximately 6,400,000 barrels ahead of California and nearly 45,000,000 barrels ahead of Oklahoma. The United States total represented 67.6 per cent and the Texas volume 6.75 per cent of the world supply in 1929.

The Gulf Coastal salt dome geological province, tributary to Houston, which is under relatively slow development because of its being largely held as a future oil reserve, produced 48,339,000 barrels of the Texas total, or more than 16 per cent. The Permian salt basin region of West Texas, another of the world's greatest reserves, yielded 136,982,000 barrels and the rest of the state 113,120,000 barrels in 1929. No other domestic reserve is comparable to the Gulf Coastal and West Texas regions except the foothills structures on the west side of the San Joaquin Valley of California.

Approximately 75 per cent of crude oil refined in Texas in 1929 was run through stills at Gulf seaboard plants in the district which extends past Houston from Port Arthur to Corpus Christi. Such Gulf Coastal refineries had crude throughput of 150,507,000 barrels in 1929 as compared with the state total of 208,820,000 barrels. The daily crude capacity of Gulf seaboard plants is more than 550,000 barrels.

Gasoline manufactured in Texas as a whole totaled 93,589,000 barrels in 1929 as compared with yields approximating 71,000,000 barrels in the Gulf seaboard division. Except for a few hundred thousand barrels the state's total of 7,727,000 barrels of lubricants manufactured in 1929 was all made at seaboard plants.

Research Program Planned By Oil Burner Men

CHICAGO, April 14.—W. F. Tant, president of the Silent Automatic Corp., Detroit, Mich., was elected president of the American Oil Burner Association at its seventh annual exposition and convention held at the Stevens Hotel, Chicago from April 7 to 12.

Other officers elected were: Vice-presidents, H. Finnie, Timken-Detroit Co., Detroit; W. J. Smith, Cleveland Steel Products Corp., Cleveland; W. C. McTarnahan, Petroleum Heat and Power Co., New York; J. H. Hirsch, Automatic Burner Corp., Chicago; and W. F. Schroeder, Schroeder and Curry, St. Louis.

A heating research program, in which the American Oil Burner Association, the American Society of Heating and Ventilating Engineers and Yale University have joined forces, is now under way to aid manufacturers in designing heating equipment for the best service and economy to home owners.

New Converts for One-Stop Stations Include Major Oil Companies

By Roger B. Stafford
N. P. N. STAFF WRITER

AKRON

THE one-stop automobile service station idea is finding many new converts, one hears in Akron in interviews with tire manufacturing company officials or with their sales managers.

Of course, in Akron, the side one hears is the tire side of the business and it seems that tire dealers, backed in some instances by manufacturers, are the most aggressive builders of one-stop stations. However, this is not the case everywhere. On the Pacific coast several of the major companies are building one-stop stations and leasing them to individuals or companies, or tire dealers for operations.

The Union Oil Co. is reported to be building a chain of stations in San Francisco which will be leased to one tire distributing company there for operation. The Associated Oil Co. also is reported to be pushing ahead a one-stop station program. The Standard Oil Co. of California is reported to have an interest in several stations but which it does not operate.

In the middle west many of the smaller oil companies have taken on the sale of tires, batteries, accessories and allied services required in the day-to-day operation of automobiles.

The Pacific coast has set the pace in catering to automobile requirements, one is informed in Akron, and the rest of the country is just beginning to awaken to the things that the Pacific coast stations are doing.

Policies of the tire manufacturers in regard to one-stop stations have not been changed materially this year from last year's policies. Firestone Tire & Rubber Co., as far as can be learned, is proceeding steadily with a station building program in alliance with its dealers. The number is reported to be between 300 and 400 although the company will not now divulge how many stations it is financially interested in or contemplates building.

MANY of the Firestone stations can easily be identified by the name under which they operate, Firestone Stores, Inc., but others, chiefly among the older units of the Firestone chain bear the names of dealers who may have been in business in their communities for several years. The manufacturing company is not financially interested in all of the one-stop stations of Firestone dealers although opinion often is voiced that the manufacturing company has backed the 100 per cent dealer.

B. F. Goodrich Co. has formed a store subsidiary, styled Goodrich Silvertown, Inc., which operates the fully owned Goodrich tire stores. Only a relatively few of these stores, it is said carry gasoline and oils or give one-stop service. One of the latter type in Pittsburgh has been described fully in NATIONAL PETROLEUM NEWS. It has been explained that Goodrich puts in stores only when necessary to get satisfactory distribution in any city. Preference is given to individual dealers wherever possible, it is said.

The policy of the Goodyear Tire & Rubber Co. also is for the individual dealer as against the company-owned tire store or one-stop service station. Goodyear favors diversification of automotive lines by its dealers but so far, it was said at the company's headquarters, it has abstained from entering any chain proposition as a company policy.

Miller Rubber Co. was interested in some one-stop stations operated by the Instant Tire Service, Inc., but this company is being taken over by Goodrich and its policies in the future will be those of the Goodrich company.

GENERAL TIRE & RUBBER CO. has entered the one-stop station field in a limited way, probably its most outstanding example being a station in Kansas City built in connection with its distributing branch there. Mohawk Tire & Rubber Co. has a one-

A one-stop service station of the Cumbow-Lanning Oil Co., Sioux Falls, S. D. places its gasoline and oil pumps under the vine-covered canopy of the station at the left. There are two greasing pits, two wash racks, tire, battery and accessory sales room at this station. The filling station is brick while the other buildings are of hollow tile and stucco. Pure Oil products are handled, and Fisk tires and U. S. batteries. The buildings were completed in 1929. Ground space is 130 by 66 feet

stop station in Akron with which it is experimenting.

Most tire manufacturers still consider the one-stop station an ideal set-up for their dealers. Several said their opinion about this was guided wholly by what the public demanded.

One-stop service, installed in a sensible set-up, can be handled so all departments of the station will be profitable if the idea of general service is sold to the car owner, the sales manager of one company said. This was an answer to a question as to whether the plugging for sales of tires, batteries, accessories and the services that go with them, would not annoy customers who drove in for gasoline, and cause them to quit coming to the station.

This sales manager said the station operator should so conduct the sales promotion work that whenever something for the car was needed the car owner would think only of that station where he could have all his ordinary needs fulfilled. Suggestion rather than plugging, was the keynote of successful one-stop merchandising, he said.

One-stop merchandising has not progressed far enough for the tire companies to have established any general ratios between sales and income among the various departments of one-stop stations, tire men said. They are working on the subject, striving to ascertain proportions of business that each department should develop and to establish quotas in line with the ratios.

One Akron man said that gasoline and oil should account for the largest sales volume at a station. This was because $200 to $400 per car per year is spent for gasoline and oil while only $50 and less is *spent* for tires and a much smaller sum for batteries and battery service. He said his observation was that the annual gross profit on tires should represent the annual net profit for a one-stop station.

A one-stop station can afford to have a salesman call on prospects who will spend $300 or $400 a year on their cars, one sales manager said. These sums may sound large for an expenditure on a single car but a motorist who drives 10,000 miles a year will buy approximately $200 worth of gasoline. Oil, lubrication, washing, an average of $50 a year on tire and tire repairs, brake adjustments, brake relining, and battery service will quickly carry the gross purchases of the car owner to more than $300.

Tire replacement business is expected to be unusually good this year, it is the opinion in Akron. Original equipment business will be much less than last year but with the business depression of the last winter, many persons will drive their old cars this year instead of buying new ones as they would have done if there had been greater prosperity.

This keeping of old cars should also help sales of other one-stop service lines. Batteries may have to be replaced, and more brakes relined outside the used car reconditioning shops. However, the car washing business may reflect the carelessness of owners in letting mud and dust remain on old cars longer than they would on bright new machines.

Maintenance Expenditure Rules Modified by Federal Court

WASHINGTON, April 14

ITEMS of coal mine equipment necessary to maintain normal output are chargeable to operating expenses not capital account. The same is true of items of equipment to maintain the normal output of an oil refinery.

The first sentence is the gist of a decision made by the federal Circuit Court of Appeals, for the fifth circuit, at New Orleans. The second sentence is a conclusion that can be drawn from the opinion written by Judge Rufus Foster in a suit brought by the Roden Coal Co. for the recovery of excess income taxes exacted from the coal company by the treasury. The case was carried to the courts by the coal company, which in its litigation, had the support of the National Coal Association and other organizations. It may be appealed.

Such items of equipment which do not increase the productivity of the property or increase its value are items of operating expense and not additions to income, even if the machinery or supplies bought to keep up the output have a useful life of more than one year. The Internal Revenue Bureau and the Board of Tax Appeals have contended that if the pieces of machinery or supplies could be used for more than a year that money spent for them constituted additions to the investment and not items of expense in the operation of the plants to be charged to operating expenses.

This holding by the Circuit Court of Appeals upsets a long line of decisions made by the Board of Tax Appeals based on Union Collieries Co., 3 B.T.A. 540. In that case the Board held that if the things bought to keep the mine in condition to maintain its output, without increasing the volume or the quality of the product, if they had useful lives in excess of one year, could not be deducted from gross income as expenses but had to be charged to capital. The court squarely recognized the economic necessity for charging such things to the cost of operation as an expense of doing business and not of adding the items to investment.

The treasury insisted that the tax payer had to charge the items to capital account and reimburse himself by deduction for depreciation. The coal companies suggested that when mining operations ceased such items would have no further opportunity to be cared for in the depreciation account and that necessarily they had to be treated as expense items the same as articles of supply or equipment that would not last longer than a year.

White Star Denies Merger

CLEVELAND, April 15.—Denial that there was foundation in fact for the report published in New York that Vacuum Oil Co. officials have conferred with H. B. Earhart, president of White Star Refining Co., Detroit, over merger terms, was made at the Detroit headquarters of White Star.

Richfield Issues More Stock

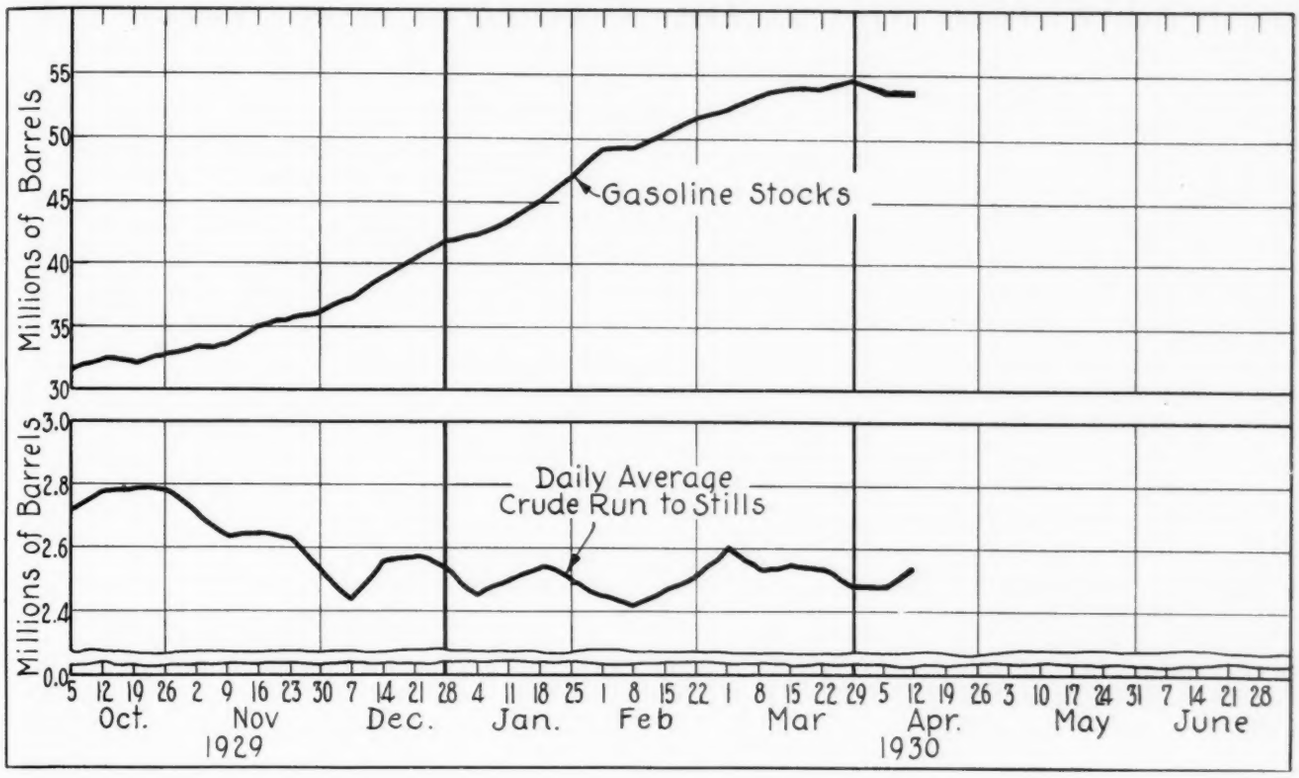
LOS ANGELES, April 11.—Richfield Oil Co. is listing 120,167 additional shares of $25 par common stock on the New York Exchange of which 20,000 shares will be used to purchase the Universal Consolidated Oil Co. Remaining shares of the new block will be issued from time to time for expansion. The entire block has been underwritten by bankers at not less than par value, it is reported.

Superintendent 25 Years

On a site that was once a seat of an ancient civilization, on which stood the Roman city of Brigetium 2000 years ago, now stands the Almos Fuzito refinery of the Vacuum Oil Co., R. T., of Budapest, Hungary. This refinery completed 25 years of service in February. Its superintendent, Sandor Schwarz, completes simultaneously 25 years of service along with the plant, according to the "Vacuum Oil News," official publication of the company.

Mr. Schwarz, who is a graduate of the University of Budapest, joined the Vacuum company during the construction days of this plant. It is at Dziedzice, which the changing tide of world history has placed into many different boundaries, the most recent war changing it from Austria-Hungary to Poland.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Gasoline Stocks Rise as Crude Runs Are Increased

NEW YORK, April 15

STOCKS of gasoline at refineries having 95.4 per cent of the operating capacity of the country, increased 100,000 barrels in the week ended April 12, reports to American Petroleum Institute show.

The group of plants covered in the compilation ran an average of 2,541,500 barrels of crude oil a day, compared with an average of 2,489,300 barrels by plants making up 95.6 per cent of the country's refining capacity in the week ended April 4.

Plants were operated at 72.4 per cent of their rated capacity last week compared with 70.9 per cent the preceding week, an increase of 1.5 per cent of their rated capacity.

Only Rocky Mountain and Texas refineries—probably only those in the Gulf Coastal region of Texas—cut their crude runs last week below the average preceding week's runs. The largest increase in volume of runs was in the Indiana-Illinois-Kentucky district where the increase in the daily average was almost 20,000 barrels. Increases of approximately 9000 barrels daily average were reported by the East Coast and Appalachian districts.

Stocks of gasoline were lowered in the Mid-Continent and Gulf Coastal regions. The largest accumulations were east of the Mississippi where refinery runs were stepped up.

Fuel oil stocks were decreased by 487,000 barrels, due mainly to drafts in California and the Texas Gulf Coast.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended Apr. 12	Daily Average Crude to Stills (Barrels) Week Ended Apr. 5	Per Cent of Reporting Capacity Operated Week Ended Apr. 12	Per Cent of Reporting Capacity Operated Week Ended Apr. 5	Stocks (Thousands of Barrels) Gasoline Apr. 12	Stocks (Thousands of Barrels) Gasoline Apr. 5	Stocks (Thousands of Barrels) Gas & Fuel Oil Apr. 12	Stocks (Thousands of Barrels) Gas & Fuel Oil Apr. 5
East Coast	100.0	480,900	471,100	79.4	77.8	9,410	9,341	6,538	6,348
Appalachian	91.0	97,100	88,500	83.3	75.9	1,926	1,870	725	697
Ind.-Ill.-Ky	98.1	325,000	307,700	87.6	82.5	8,736	8,601	3,188	3,036
Okla.-Kans.-Mo	89.1	320,200	300,400	77.8	73.0	4,391	4,506	3,697	3,593
Texas	90.4	541,400	544,700	76.0	76.4	7,875	7,869	10,463	10,868
La.-Ark	96.8	170,100	168,600	64.9	64.4	2,748	2,765	2,068	2,031
Rocky Mountain	93.6	60,000	63,100	43.1	45.3	2,971	3,072	1,060	1,069
California	99.3	546,800	545,200	61.3	61.2	15,851	15,784	108,106	108,690
Total U. S.	95.4	2,541,500	2,489,300	72.4	70.9	53,908	53,808	135,845	136,332
Texas (Gulf Coast)	99.4	395,800	409,600	75.6	78.2	6,765	6,772	7,884	8,401
La. (Gulf Coast)	100.0	105,900	103,400	71.8	70.1	2,377	2,412	1,213	1,225

Review of Late Production News

DAILY average production continued to increase the week ended April 12 when it rose 30,700 barrels, to 2,561,150 barrels, according to the American Petroleum Institute.

This was due to a rise of 29,650 barrels in Oklahoma production, 12,000 barrels of which was in Oklahoma City and the rest in smaller gains in Seminole, Earlsboro and Little River fields.

Crude oil imports declined 61,570 barrels, being at the rate of nearly 140,000 barrels daily average the past week.

Total new crude supply was 2,700,865 barrels, compared with 2,731,735 barrels the previous week.

California production dropped 3000 barrels. The Elwood-Goleta field gained 4700 barrels and Kettleman Hills 2100 barrels, while Santa Fe Springs declined 4500 barrels and Midway-Sunset 2500 barrels.

Voshell field in Kansas gained 7400 barrels. Van Zandt gained 2200 and Eastern production 2500 barrels. Winkler fell off 4000 barrels.

California

COMPLETION last week of Pacific Western Oil Co.'s tideland producer at Elwood and Standard Oil Co.'s 81-11P on the north dome of Kettleman Hills together with adverse court rulings in regards operation of California gas law at Santa Fe Springs combined to prevent a further reduction in the state's daily average crude output during week ended April 12.

It was estimated that total production had increased 300 barrels per day over the previous week's figure of 610,800. This figure is thought to be rather conservative in as much as the American Petroleum Institute estimated crude production for the same period at 620,700 barrels, which in turn is considered to be very liberal.

A promised production test at Belridge Oil Co.'s deep test of the Temblor sands in the Belridge field, Kern county, held the interest of California operators. The cement plug is to be drilled out April 14 after nearly three months of preparation.

Production at Santa Fe Springs, Los Angeles County, although reduced to 120,339 barrels April 9, increased to 122,279 barrels April 10, following ruling on gas law preventing enforcement of injunction at Santa Fe Springs.

Hearing on gas law enforcement at Long Beach field continued until April 28 following a two day session before Superior Judge Crawford that indicated a very different ruling or injunction might be granted in this field, one that would not work hardships on operating companies.

Current production in this country by pools is found on page 113.

Standard's well at Kettleman Hills completed last week is now flowing 3000 barrels of 60.8 gravity oil and 91 million cubic feet of wet gas per day.

Texas, New Mexico, Louisiana

ACTIVITY in the Hobbs district of Lea county, New Mexico, is turning current attention to an area in the Permian salt basin where new locations have brought operations to approximately 20 tests under way or contemplated. Aside from the Judkins area of Ector county, Texas, where 30-odd wells are drilling activities remain quiet in the general territory.

East of Graham, in the Young county area of the Central Mineral Belt, the largest well in the history of the Texas region ran wild when completed April 9 for estimated initial production of 12,000 to 13,000 barrels daily. It is Nash & Windfohr's No. 1 McCloud, in the J. W. Mannin survey, which tapped sandy lime pay at 3757 feet. It is believed to be a crevice well, having been completed in an area long proved for small production.

Operations elsewhere in Texas and in Louisiana were of purely local significance throughout the week.

Wyoming, Montana

THE new border field lying across the Montana-Alberta line and explorations for oil and gas in South Dakota and several wildcats in Wyoming and Colorado hold chief interest of Rocky Mountain states operators. In the new border field, as in the new district in western South Dakota, many new wells are projected and some are under way. The discovery well on the Barker Dome in south Dakota is to be deepened to the Madison limestone; some think it is not on structure because deeper drilling into the Minnelusa did not increase the production.

Oklahoma-Kansas

WILDCAT completions in the Mid-Continent have been more impressive during the past week than they have been for some time. Chief among them was the 2000-barrel well in the north central part of Moore county in the Panhandle of Texas. Though it was carried to water it indicates a pool and development is soon to follow.

In Oklahoma, the area near the town of Chandler in Lincoln county had two nice wells that will start things moving there and the same idea centers around a new Cromwell producer found near the Asher pool in Pottawatomie county.

Harvey, Edwards and McPherson counties in Kansas all had interesting wildcat completions though the Barnsdall well in Edwards county is probably the most important. Siliceous lime production in the Voshell pool where the production has been doubled by deepening the wells, has forced some real proration.

Railroads Join Mid-Continent Refiners In Opposing Higher Freight Rates

By A. E. Heiss

N. P. N. STAFF WRITER

WASHINGTON, April 14

AIDED by articles taken from the NATIONAL PETROLEUM NEWS, petroleum refiners interested primarily in the Mid-Continent last week warned southwestern railroads that increases in freight rates meant driving traffic away from their rails to trucks, pipe lines and barges.

The warnings were made in the course of a three-day argument in the general investigation which the Interstate Commerce Commission has been conducting in the last three years in compliance with the Hoch-Smith resolution, adopted by Congress in 1925. That resolution directs the rate regulating body to investigate freight rates throughout the country with a view to giving lower ones on the products of agriculture. Its theory is that there is a greater depression in agriculture than in other industries.

Although not going as far as the Mid-Continent refiners, the southwestern railroads and the Illinois Central definitely advised the rate making body that increases proposed by the two of its examiners who conducted the hearings would hurt, not help, them. The southwestern lines definitely opposed the recommendation of the examiners that the commission require them to increase their rates, from the Mid-Continent groups, 1.5 cents per 100 pounds, to Kansas City, Chicago and St. Louis, and keep the rates when so advanced, at the figures produced by the increases so that the southwestern railroads, regardless of what pipe lines or barges on the Mississippi river might do with their rates, the railroads could do nothing for the refiners served by them.

Illinois Central Protests Examiners' Report

The Illinois Central definitely opposed any breaking up of the New Orleans-Baton Rouge group and any of the increases in the Mississippi Valley territory proposed by the examiners. Elmer A. Smith, attorney for that railroad and its subsidiaries, said that increases in the valley, supported by the Gulf interests and opposed by the Standard, would take business from them and give it to the barges.

In the last few years the barges, he said, had taken business amounting to 4800 cars a year from them from New Orleans and Baton Rouge to Memphis alone. The Illinois Central would like to get back some of that business but that if the rates from the south Louisiana group were increased there would be no hope of that. He asserted that the Gulf interest was the only one that had complained about rates in the valley.

Luther M. Walter, speaking for Standard interests, characterized the proposal of the examiners as preposterous in that it proposed to make rates east of the Mississippi higher than west of that stream, an exact reversal of the situation in respect of other rates.

Shell Supports Increased Rates

The Shell Petroleum Corporation approved the proposal of the examiners to increase rates in the southwestern territory and particularly to the Kansas City and St. Louis gateways. The latter recommendation, if adopted, would increase the rates to the territory east of the Mississippi and north of the Ohio by just about the amount, it was asserted in the arguments, needed to turn a sale of gasoline, in tank-car lots, from one company to another.

M. G. Roberts, attorney for the southwestern railroads, opposed the increase to the gateways. He said that in view of the production of refined products in the Mid-Continent refinery groups much greater than the consumption in them the refiners, their customers, had to find markets outside of their territory.

"Freezing the rates to the gateways would deprive the railroads of discretion as to the rates needed by their refiners to get to market," said Mr. Roberts. "Putting a minimum rate order on us would put our customers and the railroads at the mercy of the pipe lines and other agencies of transportation and allow the pipe line refiners to do as they pleased, to deprive us and our customers of business."

Representations in behalf of the Mid-Continent refiners were made specifically by H. D. Driscoll. In its essence, Mr. Driscoll said that the question in this case was as to what rates would assure retention of petroleum and its products to the rails of the southwestern railroads.

The Mid-Continent refiners emphasized the point that increased freight rates meant diversion of petroleum and its products to trucks, barges and pipe lines by laying before the members of the commission three articles from the NATIONAL PETROLEUM NEWS of January 29 showing the use of trucks by Barnsdall, the recommendation of an examiner employed by the Commission that the rate body recognize pipe line competition as a reason for reduction in rates by railroads desiring to meet such competition, an article about the Barnsdall plan for a gasoline pipe line from Okmulgee to Milwaukee, both on January 19, and an article about the plans of the Sun Oil Co. for a pipe line to tap the great lakes, March 5.

Not one of the articles mentioned, technically speaking, was in the record in the case because every one was published long after the taking of testimony was closed. No one objected, however, to their inclusion in a pamphlet prepared by Mr. Driscoll to help the Commission to recall the line of his arguments in behalf of the Mid-Continent refiners. The rest of the pamphlet consisted of rate scales proposed by the railroads, by the Gulf, Standard, Sinclair and Mid-Continent refiners and the scales recommended by the examiners.

Texas and Kansas State Rates Caused Difficulty

High rates prescribed by the Texas railroad commission and low rates prescribed by the Kansas legislature, away back in 1905, were held forth by Robert C. Fulbright, Gulf attorney, as the causes of the existing situation. The Texas scale has a nice grade upward for the first 120 miles at which distance it becomes 39.5 cents, which is higher than the rate from Tulsa to Chicago. But for all hauls in excess of 120 miles the rate is the same, 39.5 cents per 100 pounds. That scheme worked all right when every refinery in Texas could reach its home markets and important gateways on substantially the same rate.

Trouble, however, he said, came when Oklahoma, Missouri, Arkansas and Louisiana adopted the Kansas scale or a bit lower and the railroads began applying that scale on shipments from one state to another in the southwest. Refiners in other states began getting into Texas at rates lower than the Texas refiners could get. So the Gulf filed formal complaints against the rates outside

of Texas and then the Interstate Commerce Commission decided to tear up the whole structure and examine it from the roots upward.

Recommendations of the Examiners

When its examiners got through with their work they recommended a scale for use within the southwest higher than the Kansas scale but lower than the Texas scale, an increase in the rates to the gateways and an increase in the rates within the Mississippi Valley territory which was approved, in the argument, by the Gulf interests and opposed by the Standard and Illinois Central. The railroads said the examiners' proposals would reduce their revenue $1,500,000 a year. The examiners also said that the commission, on traffic going not more than 250 miles from New Orleans should treat the refiners in the immediate vicinity of New Orleans as being in one rate group and those at Baton Rouge as being in another. At present they are both in one group regardless of how far or how near the traffic is going.

Tennessee Defines What Can Be Sold As Premium Gasoline

By A. S. James
N. P. N. STAFF WRITER

TULSA, April 12

SO-CALLED premium gasolines must have premium merit to them if they are to be sold in Tennessee. That is the ruling of the state attorney general on the new tax law passed last year to become effective this spring. The law was put into effect April 10. It specifies what constitutes a premium gasoline.

Mid-Continent refiners who distribute gasolines in Tennessee were somewhat alarmed at first by circulars issued by the Tennessee Commissioner of Finance and Taxation. From conversations with the state oil inspector, however, these fears are groundless for the time being at least.

One circular states in part that "Reasonable trade customs recognize a differentiation between U. S. Motor Gasoline, accepted as standard gasoline by the State of Tennessee . . . and so called High Test, Hi Test, High Power, Hi Power, High Grade, Hi Grade, Special, High Speed and/or Hi Speed Gasoline, etc.; usually sold at prices above U. S. Motor gasoline. . . ."

The distillation range of U. S. Motor gasoline is given in the circular, followed by the distillation points of the gasoline which can be sold at a premium. This latter is as follows:

"When 10 per cent has been recovered in the receiver, the thermometer shall not read more than 65 degrees C. (149 degrees F.) nor less than 50 degrees C. (122 degrees F.) provided that, for each per cent distillation loss less than 4 per cent, obtained in the A.S.T.M. distillation, the minimum 10 per cent temperature requirement shall be lowered 3 degrees C. (5.4 degrees F.)

"When 50 per cent has been recovered in the receiver, the thermometer shall not read more than 125 degrees C. (257 degrees F.)

"When 90 per cent has been recovered in the receiver, the thermometer shall not read more than 180 degrees C. (356 degrees F.)

"The end point shall not be higher than 205 degrees C. (401 degrees F.)

"At least 95 per cent shall be recovered as distillate in the receiver from the distillation."

The specifications for this premium gasoline are the same as the U. S. government specifications for its Motor Fuel V, or special grade.

A gasoline to meet this standard can be made from Mid-Continent crude, several refiners said, although the yield would be cut down. In fact several refiners at present make a premium gasoline which easily meets the premium gasoline specification.

Some refiners thought that Ethyl gasoline, as a premium product, would be ruled out of Tennessee under these specifications. While some Mid-Continent refiners make an Ethyl gasoline which will meet those specifications, others use a regular U. S. Motor or slightly better, for their base stock. Since the Ethyl sells at a premium and the base stock would not meet the premium specifications, it was feared the Ethyl would be ruled out.

A phone call by the writer to State Oil Inspector Booton April 11, however developed sufficient information to alleviate those fears. Inspector Booton said the state had not taken up Ethyl gasoline, natural gasoline or benzol, and that after that had been handled and decided upon, sufficient notice would be given the refiners.

"Tell the boys over there," Inspector Booton said, "that we are not bears even if we are a little woolly. Tennessee has been a dumping ground for bad gasoline, and we don't propose to have our citizens gyped any longer. If the gasoline is a premium gasoline, that's all right, but if it is not, then we are going to stick up big caution signs for the public to read and those signs are going to state that the gasoline has been condemned by the State as not being a premium gasoline."

"In other words," the writer interrupted, "you are going to prevent an unscrupulous jobber from mixing some dye with his ordinary gasoline and selling it as a premium fuel."

"That's the idea exactly," Mr. Booton replied. "If a man advertises his gasoline under any of the names specified in the circular, then his gasoline has to meet those premium specifications. And we are not going to try to put anything over on the honest man. We want our public to get what they pay for."

But even at that, there seem to be ways of getting around the law, according to a story told by Inspector Booton. He said a jobber had put up large signs advertising a "High Test" gasoline, which sold at 5 cents over the regular gasoline. April 10, when the new law became effective, that man pulled down his "High Test" signs, and put up another reading "Red Gasoline." His price was still 5 cents above the regular grade.

"And what you gonna do with a bird like that?" Mr. Booton asked. "We can't do anything there. If the public wants to pay 5 cents premium for red gasoline that's its hard luck. We did all we could."

Ethyl gasoline has not been advertised as a high speed or high test gasoline, but as an anti-knock gasoline, although, if a refiner desires, he can use a high test gasoline as his blending stock and advertise it as such, it was pointed out here. The Ethyl Gasoline Corp. has certain minimum specifications which assures the motorists of a good grade of gasoline but those minimum specifications do not approach the premium grade specifications in Tennessee.

Roy Allison Goes To Merit Equipment

CLEVELAND—A. Roy Allison, who has been vice president and sales manager of the Stevens Grease & Oil Co., here for the past six years, has resigned to become sales manager of the Merit Equipment Corp., Cleveland.

Mr. Allison retains his directorship in the Stevens company.

Advances in Mid-Continent Crude Prices Looked On as Promise for Future

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, April 12

THE cheering over the crude oil price advance of April 10 seemed a trifle forced. Everybody was glad that some assistance was given the producer, but the amount of the raise was not such as to call for parading the troops.

Subsidiary companies to the Standard Oil Co. of New Jersey took the lead in posting the advance, as they had in making the reductions of Jan. 15 and 16. Humble Oil & Refining Co., in Texas, and Carter Oil Co., in Oklahoma and Kansas, set up the new schedules, with new differentials between various gravities. All other purchasing companies followed, making the new prices effective April 10.

It will be recalled that, when these two Jersey company subsidiaries reduced the price of crude in January, the commotion that was raised by independent producing companies was of imposing proportions. It fanned the fires of the tariff campaign that had been smoldering for years and the excursion to Washington which followed came close to being successful. At least it got much farther than its critics, and even its friends, thought it would at the time the special train left Oklahoma.

There are those in the Mid-Continent who say that the small advance posted last week was timed with an eye on the coming convention of the Independent Petroleum Association of America, April 18 and 19 in Fort Worth. This is the organization which is sponsoring the tariff movement. Many of its Texas members had a hand in getting the new pipe line law of Texas presented to the legislature.

There doubtless is no foundation for this criticism. There has been not the slightest evidence thus far that the New Jersey company is conscious of the existence of this independent association. There is no reason for assuming that it has become suddenly aware of its coming meeting, and is seeking to apply a snuffer to the flame the association has been stoking. Mr. Farish set forth the Humble's thought in the matter of advances in crude prices as follows, in part of his public statement accompanying the announcement of the advance.

"The Humble Oil & Refining Co. feels that its posted price for crude oil should be more sensitive to fluctuations in the wholesale price of products, particularly gasoline, than it has been in the past, even though this necessitates more frequent price adjustments."

So sensitive is the market at this time that it is practically hysterical, for it was necessary to post prices in half cents. This brings into play an extra key on the calculating machines in the offices of the purchasing companies.

The average pipe line stream of crude oil from Oklahoma and Kansas is 37-37.9 degrees, according to one purchasing agency. Another says the oil it buys averages one degree higher in gravity. Taking the former as the key grade, the new price is $1.32½ a barrel, an increase of 9½ cents. The new schedule fails by 17½ cents of restoring the price before the Jan. 16 reduction. For the next higher gravity the price is $1.36, a raise of 10 cents, but still 19 cents below the price paid to Jan. 6. The difference between the new prices and the old ranges from 10 cents a barrel on low gravity crudes to 28 cents on the highest gravities.

This raise will not be regarded as a bid for more drilling. There is no misapprehension on the part of any oil producer as to the facts in the case. Production has not declined the country over, it has merely been prorated and otherwise held off the market. When anybody looks at the weekly figures compiled by the American Petroleum Institute and says that production has "declined" he is using the wrong word. It has merely been decreased, due to some deeper prorating. This is true of California, of Texas, of Oklahoma and of Kansas.

Conversely, the price cut in January made little difference in drilling in Oklahoma, Kansas and Texas. Here is the report as of the date nearest the January reduction and the present:

	Texas and New Mexico				
	Locations	Rigs	Drilling	Shut Down	Total
Jan. 18	148	101	553	457	1259
April 5	131	125	629	370	1255
		Oklahoma			
Jan. 15	60	150	537	263	1010
April 5	78	89	572	178	917
		Kansas			
	Locations and Rigs		Drilling	Shut Down	Total
Jan. 15	78		245	88	411
April 5	103		229	63	395

The total number of operations for the three areas as of the middle of January was 2680 and as of April 5 was 2667. Kansas showed a decrease in the number of wells drilling by 16.

Taking the Farish statement bit by bit, it is pertinent to set forth the production figures as of the time the New Jersey companies reduced the price and as of the partial restoration. Said Mr. Farish:

"The advance in the price of crude oil posted today by the Humble Oil & Refining Co. was made possible by the improvement in the relationship between supplies of crude and refined products and the market demand therefor, and by the improvement in the wholesale market for gasoline."

Here are the American Petroleum Institute figures on production as of the dates near the price changes:

Daily Average Production, Week Ended

	Jan. 11	April 5
Oklahoma	707,550	635,600
Kansas	112,500	117,550
Texas, except Gulf Coast	683,200	630,550
Texas Gulf Coast	148,450	192,700
California	699,700	620,700
Total U. S.	2,689,250	2,530,450

There was a decline of 158,800 barrels as of the two dates, showing substantial improvement, achieved by proration.

As for market demand, it can be interpreted from the crude oil angle only in respect of crude oil run to stills. As of Jan. 11 the A.P.I. showed daily average runs to stills of 2,502,800 barrels and as of April 5 runs of 2,489,300 barrels. That was a decrease of 13,500 barrels. The per cent of total rated capacity in the U. S. reported as of Jan. 11 was 95.5 and as of April 5 was 95.6 per cent.

The reasoning back of the price advance must be permitted to rest upon the latter part of the quoted

Summary of Crude Price Changes

April 10.—Carter Oil Co. initiated advance of 7 to 14 cents a barrel on Oklahoma and Kansas crude.

This was met the same day by Prairie Oil & Gas Co. in Oklahoma and Kansas.

April 10.—Humble Oil & Refining Co. advanced all North Texas crudes by 4 to 13 cents a barrel.

This was met by Prairie Oil & Gas Co. in North Texas, lower grades in this field differing from those of Oklahoma-Kansas crudes.

April 10.—Humble advanced Texas Panhandle, crude by 2.5 to 11.5 cents; West and Southwest Texas, Gulf Coast, and New Mexico crudes by 10 cents flat.

April 10.—Magnolia Petroleum Co. met Prairie's Oklahoma-Kansas prices in Texas, Oklahoma and Kansas, except on low grades. Also met Humble's advances in West Texas and Texas Panhandle.

April 10.—The Texas Co. met Humble's postings in north, north central and central Texas, in the Texas Panhandle, in West Texas, Gulf Coastal and New Mexico fields.

April 11.—Standard Oil Co. of Louisiana advanced North Louisiana and Arkansas crudes in amounts ranging from 4 to 13 cents.

April 10.—The Midwest Refining Co. advanced Salt Creek, Wyo. crude to conform with prices of Prairie in Oklahoma-Kansas.

April 11.—Ohio Oil Co. and Midwest Refining Co. advanced Wyoming, Montana and New Mexico crudes from 5 to 10 cents.

April 11.—Ohio Oil Co. advanced Central States crudes 5 cents.

April 11.—Seep Agency advanced Somerset, Ky. and Wayne, W. Va. crude 10 cents.

April 11.—Canadian crude advanced 5 cents.

April 11.—Stephens, Ark. crude advanced 6 cents. Urania, La. advanced 15 cents.

sentence—the improvement in market demand for gasoline and the wholesale price—and not upon the statistics. The production of crude oil has been notably restrained but the refining department has not stayed its hand. Seasonal increase in demand has been felt by refiners over the past month although they operated at a high rate in January also.

"The continued accumulation of stocks of refined products the latter part of last year has been arrested by the reduction in refinery activity in line with the suggestion of the Federal Oil Conservation Board," Mr. Farish continued. "Threatened accumulation of stocks of crude has been avoided through curtailment of production in California and Oklahoma and improved conditions in Texas."

The arrestation of the accumulation of stocks of refined products occurred the latter part of March and early in April. Gasoline stocks as reported by the A.P.I. from the 95.6 per cent of total refinery capacity that makes weekly statements were nearly 12 million barrels greater then than at the end of 1929. From 41,960,000 barrels on Dec. 28, they marched steadily upward through March 15. The first interruption in the addition to gasoline storage occurred March 22 when a withdrawal of 156,000 barrels took place. Everybody felt pretty good and there was some speech-making. The following week saw 909,000 barrels put back in storage, but this was wiped out and a little to spare the next week, April 5, by the shrinkage of 931,000 barrels.

There has been noteworthy improvement in gas and fuel oil stocks, as reported by the A.P.I. from the same percentage of refinery capacity. On Dec. 28 they stood at 145,152,000 barrels and by April 5 they had decreased 8,820,000 barrels. There was a small gain the week of April 5.

Mr. Farish detects co-operation between the refiners and the Federal Oil Conservation Board in the latter's suggestion for curtailing refinery operations. As of Jan. 11 the percentage of total refining capacity in the United States reporting to the A.P.I. was 95.5 and on April 5 it was 95.6 per cent. Of this total capacity the percentage operated on Jan. 11 was 71.8 and on April 5 was 70.9. That was on the improvement side, although it was a slight factor.

He concluded his statement by saying that "Whether the prices now posted can be maintained or increased depend upon the success of the industry in securing and maintaining a proper balance between crude supplies and the demand for refined products."

This last part, to the producer, was the best. There is the implication that a little more united effort in curbing production and refinery operations will be rewarded.

A new brand of economics is at work in this, as in other industries. The old fashioned method was to curb production through price reductions. The popular thing today is to equalize supply and demand as nearly as can be by bottling up production. The copper people were among the first to discover this wisdom. The federal government is doing something similar with respect to wheat, although its efforts have as yet not been crowned with success. A short wheat crop this year, now threatened by the long drouth, may convert its little transaction into a profit.

There were signs in January that the New Jersey company had wearied of the effort to obtain co-operation among producers and refiners and had elected to fall back upon the old familiar price-cutting remedy to cure overproduction. It had waited a long time to do it—the inventory situation had been fully as urgent in 1929. The writer has been informed by one who knows what he is talking about that the New Jersey company was all set to make the reduction last fall. It held off because of the stock market crash, not wishing to make things worse than they were. Finally it got around to it and its statements on the matter indicated that its patience had been exhausted in trying out the new brand of economics.

It has taken fresh hope now. It points out, through Mr. Farish, that it has inaugurated a new policy. Price fluctuations may be more rapid than in the past. One can only reason that if proration and curtailment are relaxed, the price will go down; if they are applied vigorously enough, the price will go up.

Doubtless it is the only game left in town to play, for the supply of oil in sight is huge and greater refinery yields of gasoline can be had whenever there is the incentive.

One of the items of encouragement in Oklahoma and Kansas has to do with wildcats. On March 26, 1921, there were 259 of the critters in the two states—a wildcat being defined as one two miles or more from production. As of March 29, last, there were 50 less. On the former date 151 were actively drilling, while on the latter there were 112.

The price advance was met by other purchasers without comment. The Carter Oil Co., which took the lead in Oklahoma and Kansas, stood upon its constitutional privilege and remained silent as to its reasons.

PITTSBURGH April 12.—The Burrell Mase Engineering Co. is furnishing equipment and acting as engineers in the construction of an oil absorption plant for the Derby Oil Co., at its Wichita, Kans., refinery; also for a pressure naphtha absorption process plant for the Freedom Oil Works, at its Freedom, Pa. refinery.

New Rules Made for Bringing in Wells As Mary Sudik Is Harnessed

By William F. Lowe
N. P. N. STAFF WRITER

TULSA, April 12

ALL things in the Oklahoma City pool come big, but the greatest single accomplishment to date is the successful shutting in of the wild Mary Sudik well. The property of the Indian Territory Illuminating Oil Co. on which it is located is in the south end of the field and is one of the largest in that prolific area.

The well blew in March 26 as a gas well with a rock pressure of 2200 pounds and a volume in excess of 100,000,000 cubic feet. Two days later, as the well drilled itself in, oil began showing in increasing quantities until the estimates of its flow ranged from 20,000 to 30,000 barrels a day. Over 200,000 barrels of oil were pumped from behind hastily constructed dikes in the immediate vicinity and there is no accounting for the amount that was carried by high winds for miles in every direction. It was finally shut in the night of April 6, having been out of control 12 days.

The fire hazard of such a well is readily apparent to anyone connected to the oil industry. Heroic measures were taken to reduce this as much as possible. State Fire Marshal C. R. O'Neal took charge of this particular phase of the work and at one time had over 100 men employed as guards about the restricted area.

A fire zone of more than six square miles was established and passes were required to enter it. Drilling and producing operations, 146 in all, were shut down in the area and all cars were detoured away from that end of the field. The expression often heard that "the field was sitting on a volcano," was no exaggeration.

On the well itself every possible effort was made to speed bringing it under control. In addition to its own staff of engineers, and production men, the company called in experts from all parts of the country to serve in an advisory capacity. The credit for the final accomplishment, however, must go to the officials and technical men of the I.T.I.O., who not only conceived the ideas, but actually performed the dangerous task of putting them in operation. Of the latter, C. O. DeVerse, district superintendent, G. W. Alexander, farm boss and Gus Shaffer, tool pusher, assumed the major responsibility.

Of the unsuccessful attempts made, one came very near to answering the purpose. In this case a system of control gates, known as a Shaffer control was lowered over and around the protruding casing. This device was anchored to the casing clamps in the cellar. With the closing of the large clamping gates against the casing and those of the Christmas tree connections above, the well was shut in temporarily. However, due to the fact that the rubber packing of the clamping gates around the casing had been pared down to make this particular connection, its efficiency was considerably reduced. A leak developed in a few hours and it was necessary to open the well and remove the fittings. The latter operation left but a few good threads on the casing, thus making future attempts at control even more difficult.

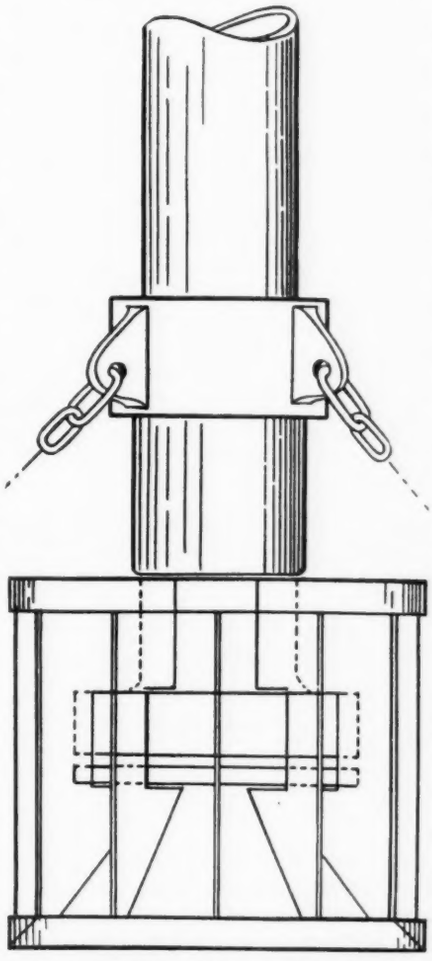


Figure 1—The device used in shutting in the Mary Sudik well as assembled

Though the Mary Sudik well was the largest wild well that the Mid-Continent ever has known, its volume in gas and oil have been equaled and exceeded in several other places. These factors however, were not the chief difficulties. The well was producing from a rather loose and unconsolidated sand and it is doubtful if the sand blast created by the high pressure of this well has had a counterpart anywhere in the world. Even the smallest leaks were converted in a short time to large holes, and it made no difference what the material was.

The successful control of the well was brought about by the use of a 7-inch die nipple made by the American Iron & Machine Works Co., Oklahoma City. The original plan was to use one that would cut threads both inside and outside the casing at the same time, but the one actually put in place cut only outside threads. A double cutting die was made in the Hinderliter Tool Co., Tulsa, but it arrived by plane some time after the well was under control.

The outside cutting nipple actually used was one foot long with one inch of cutting threads and two and one half inches of make-up threads above the die. A packing gland was attached on the outside of the nipple at the lower end, though the hard rubber packing was not put in until the connection had been made tight. Its bolts were then removed and the packing inserted. When it was made up completely there was very little chance of a leak at the joining point of the nipple with the casing, as the gland itself was capable of withstanding 3000 pounds pressure.

The use of the packer in this position is really the only new thing about the whole procedure, for die nipples have served similar purposes before. The guide vein with separate metal wings, which aided in stabbing the die over the casing, is also a familiar appliance, though in this case it was so constructed that it could easily be removed after it had been of service.

The control fittings above the die nipple are shown in the accompanying illustration. The 9-inch gates

are of 5000 pounds test pressure and the 4-inch of 3000 pounds line test, which gave to both a wide safety factor over the pressure of the well. Above the top gate, the long control nipple not only carried the oil stream above the workers, but was used in swinging the Christmas tree into place. Clamped to its upper end, a drilling line ran over the top of the derrick and the whole assembly was swung into position by the use of guy lines. However, a description of the process is much more simple than the act.

There was some discussion following the closing of the well as to whether the emergency fittings would make a control suitable for production purposes. It was thought it might be necessary to kill the well by mudding in order to install the usual completion fittings. The idea was discarded however, when the fittings showed no leaks after three days.

There certainly was no question about their having worked on Mary before she would be good, though there still is a possibility of her having the last word. Cleaning up the mess she made will be quite an expensive task. Plows and fresnos are busy in every direction turning the oil soaked soil and there is the little matter of cleaning up an adjoining camp which was given a touch of oil field drabness before its time. The area around the well is now one of great activity and 73 wells, within a one mile radius, are in various stages of reaching for the big pay that so agitated Mary. The major portion of these wells are new developments.

Through all the excitement and anxiety of the days when the fire hazard was so great, there was an undercurrent of humor caused by the comments and suggestions that came in from the "outside." Newspaper men, whose ideas of the oil industry were confined largely to the purchase of gasoline, made good use of vivid imaginations in the painting of word pictures. One large eastern sheet had the engine room and power plant below the derrick floor, 12 feet deep in oil and another had the derrick weaving like a snake. There is not much question about the cellar having been over moist or that the rig was a bit nervous, but the statements as printed brought healthy grins to the Oklahoma City workers.

Due to the syndicated press notices, the story of the well breaking loose was carried to the whole country and suggestions as to the proper procedure for its control came pouring in. Telegrams and airmail letters, addressed simply Wild Well, Oklahoma City, were received from 24 states, each offering a different idea. Carpenters, upholsterers, farmers, tombstone cutters and a steam shovel operator, all thought they had a sure cure for Mary. Some of their suggestions had merit, though many of them were just a flight of the imagination. Others were quite secretive about their idea and called for a consideration and expenses before divulging.

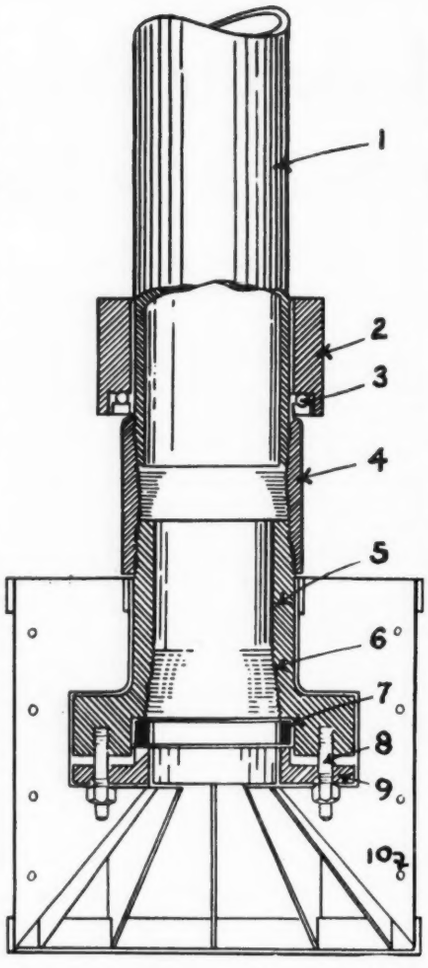


Figure 2—Cross section of device used in shutting in the Mary Sudik well. 1. Nine-inch pipe; 2. Swivel snubber, equipped with four ears, and set on ball bearings; 3. Ball bearing; 4. Collar to connect steel die to pipe; 5. Steel die, 10-thread connection, fluted one inch, full thread three and one-fourth inches; 6. Die threads; 7. Rubber packing, one inch by two inches; 8. Stud bolts; 9. Stuffing box packing gland; 10. Fourteen blade guide fan, 7¼ inches at top, 19 inches at bottom
The special die used was made by the American Iron & Machine Works Co., Oklahoma City

One man thought that the dropping of large quantities of salt from a plane would do the trick. Another suggested that sand from the same source would quickly smoother the flow. From down in Tennessee came the idea for dropping an immense concrete block as a night cap, while a Wisconsin lady wanted to build a wall around the well and drown it. The most helpful suggestion however, came from a godly soul in Washington who said he was doing a whole flock of praying.

As a result of the difficulties encountered in the control of this well, additional rules were made for bringing in wells in the future. These seem necessitated by the approaching town lot drilling campaign to the southeast edge of the city. There will be considerable congestion in this part of the field not only because of close spacing of wells but also on account of its being in a more or less settled district. The following regulations are to be included in the new drilling schedule:

(1) All persons, firms and/or corporations engaged in drilling wells for oil and/or gas in the Oklahoma City Field are required to set not less than 250 feet of surface casing which shall be cemented from top to bottom.

(2) All persons, firms and/or corporations engaged in drilling wells for oil and/or gas in the Oklahoma City Field, before penetrating the formation known as the Detrital Zone, or the Siliceous Lime, or any of the producing sands below the base of the Oswego Lime, shall set a string of casing, in addition to the surface casing, at a depth of not less than 2000 feet, which casing shall be cemented either to the surface or with at least 1500 sacks of cement. In addition thereto, before bringing any well below the base of the Oswego Lime into production, a third string of casing known as a flow string shall be set as near the top of the producing horizon as practical, and said casing shall be cemented with sufficient cement to reach the bottom of the second string of casing, if practical, and if not, then with at least 1500 sacks of cement.

(3) Immediately after cementing each string of casing except surface casing, a master gate shall be installed thereon and in addition thereto a blow-out preventer or other device designed to prevent blow-outs.

CASPER, Wyo., April 12.—Sid Keoughan, founder of the Continental Oil Co., but since his resignation an independent operator, will drill a deep test on Skull Creek wildcat structure, not far from Craig, Colo., and is understood to be planning other wildcat tests in widely scattered areas in the Mountain States.

WASHINGTON, April 14.—At the request of Representative O'Connor of Oklahoma, the House of Representatives has adopted a joint resolution authorizing President Hoover to invite the states of the union and all foreign countries to participate in the International Petroleum Exposition to be held at Tulsa, from Oct. 4 to Oct. 11.

TULSA—Louis Roark has opened an office at 435 Philcade Bldg., Tulsa, as consulting geologist and operator of the oil flow indicator of the L. E. Trout & Co.

Decision Casts Doubt on Legality Of Kettleman Hills Agreement

By Jack N. Westsmith
N. P. N. STAFF WRITER

LOS ANGELES, April 10

HOLDERS of permit land in the Kettleman Hills viewed with considerable interest the ruling made April 9, by Justice Bailey of the District of Columbia Supreme Court to the effect that the administration's oil conservation program is illegal.

In accord with this program development work at "the Hills" has proceeded in an orderly manner under the Kettleman Hills Conservation Agreement which provides that only four wells shall be completed prior to July 1, 1931, that certain other wells shall be drilled into the oil sand and there plugged until the termination of the agreement, and that four wells shall not be commenced for a specified period prior to the end of the suspension period.

One section of the agreement reads as follows: "This deferred development and postponed production of lands included in this agreement is undertaken at the request and on the initiative of The Secretary of the Interior for the purpose of furthering the Government's policy of conservation and of insuring the development of the area covered by this agreement in an orderly and economic manner, and in consideration of this compliance with his policy we jointly ask for a two year extension of our permits, to be granted when applied for in the manner provided under the regulations."

Another section states that in line with the Government's policy of oil conservation, to which this agreement contributes, the operators at Kettleman Hills will consider a plan of unit development or other cooperative method of developing the area.

Although these operators have considered various plans for future development of Kettleman Hills there has always been some particular section or provision that did not meet with the approval of all concerned.

At a recent meeting of the Kettleman Hills Operators' Committee, that has before it two of the most promising plans of development, it was indicated that a majority of the members favored that providing for unit development over that based upon cooperative exploitation.

Each interested company is studying the proposed plan from its particular viewpoint with the purpose of remedying such defects as may exist. Following these examinations the suggested modifications will be submitted to the committee where it may be again changed. It must then be returned to the various operating companies for their signatures and to government officials for their approval. Because of this lengthy procedure it is expected that several months will be consumed before a satisfactory plan can be worked out.

The tentative plan of unit development now being considered involves only the proved acreage on the north dome at Kettleman Hills and contemplates the formation of a non-profit corporation not requiring the assignment of lease-hold interests to the proposed association. However, to insure this operating association absolute control the plan provides that the title of all oil, gas and natural gasoline, and all other hydrocarbon substances shall be vested, immediately upon production, in the association.

Association to Prorate Output to Members

Production of gas, oil and natural gasoline in the area is to be prorated among members of the association in proportion to their membership interest. Members are to have privilege of taking either the oil or its sale value. This clause has been included because refinery results obtained from using Kettleman Hills crude indicated that a production of 40,000 barrels of oil and the accompanying gas production would yield as much in return as a production of approximately 230,000 barrels from practically any other field in the state.

Operators in the area that are solely producing units will be paid according to the sale value of the oil and will, therefore, not benefit from the high gasoline content of this particular crude. Land and royalty owners will be in the same position and are expected to protest against this clause during such argument as precedes acceptance of the plan.

Management of the association will rest, according to the present plan of unit operation, in the hands of 11 men forming a board of directors appointed by the operators, the directors to elect an operating manager who will conduct drilling and exploitation throughout the field.

Proration of oil, gas and natural gas production, under the present plan would be arranged among the operators, according to the following approximate percentages of the total:

Standard Oil Co.	50
Continental Oil Co.	15
General Petroleum Corp.	13
Milham Exploration Co.	10
Others	17

Under provisions laid down in the present plan, unit development would be exercised at Kettleman Hills for a period of 20 years with a possibility of being renewed for an additional 10 years if necessary. Production from the field would act as a shock absorber for the state in stabilizing daily average outputs of crude oil. If other fields were not discovered during the existence of this agreement and a consequent shortage of oil should exist, Kettleman Hills would be opened up to balance supply against demand and vice versa should production from other fields increase, production from this field would be curtailed.

There is doubt in the minds of some operators as to just how far the association may go in regulating production and in combining the operating companies into a single unit. According to one operator, a clause in the amended Federal Leasing Act of 1920 makes it illegal for any individual, corporation or otherwise to control over 2560 acres of permit land on any one structure. Three of the larger companies, General Petroleum Corp., Continental Oil Co., and Milham Exploration Co., each hold nearly this amount within the proved area. Standard Oil Co., holding approximately 6000 acres nearly all of which is on Fee land and is therefore practically outside this law, is reported to have agreed to cooperate in any feasible plan for future development of the area.

Expressions of opinions by leaders in the California industry as to the possible effect of Judge Bailey's decision on the Kettleman Hills situation indicated that whereas a majority believed the ruling would be upheld by the Supreme Court they did not believe future developments of the unit plan or cooperative plan at Kettleman Hills would be materially impaired.

Prorating Practice Cited as Promoting Field Operating Efficiency

By Paul Wagner
N. P. N. STAFF WRITER

MIDLAND, Texas, April 11

PRORATING practice in Texas has promoted more orderly and efficient operating methods, at the same time eliminating physical and economic waste in the oil fields, according to L. E. Barrows, Fort Worth division manager of the Texas Co., speaking before the southwestern district engineering group of the American Petroleum Institute division of production at Midland.

Mr. Barrows sees in proration a practice having much in common with unitization, their objective being similar but necessarily approached differently.

The Mid-Continent Oil & Gas Association, has defined proration as "an agreement falling short of complete unitization in that the interests remain in severalty and each owner may develop and operate his individual lease or tract, but providing for a plan of cooperative development and operation designed to promote more orderly drilling and production than would otherwise occur."

Unitization has been defined by the same organization "as the process by which divided interests in an oil and/or gas pool containing a number of tracts of land are converted into undivided interests in the entire area; when the owner of the oil or gas rights in an individual tract, or tracts, of land surrenders his exclusive ownership thereof in return for an assignment to him of an undivided interest in the oil and gas rights of the pool as a whole; the purpose being to develop and operate the area as one property or unit through the instrumentality of a common agent, trustee or committee and thus avoid unnecessary competitive drilling, waste of gas and duplication of effort and secure greater recovery of oil at less cost."

Mr. Barrows told the A. P. I. production group that no one who subscribes to the ideas of cooperation, practical conservation, economy, efficiency, reduced physical and economic waste, the public interest, and so forth can conscientiously oppose the fundamental purpose of these plans when fairly applied.

Referring to present laws hampering prorating practice in Texas, he said the railroad commission as the state's conservation agency is restricted to prevention of physical waste which must be proved at public hearings; the commission has, however, anticipated physical waste above ground, due to limited markets, and issued orders to prevent it.

In strict compliance with the statutes the Texas commission disregards any testimony as to economic waste, although, Mr. Barrows pointed

L. E. Barrows

out, physical and economic waste cannot be divorced.

The commission has recognized as physical waste, within the meaning of present Texas statutes, the following:

(1)—Waste of oil and gas above ground in the way of storage tanks and the evaporation of light fractions from them.

(2)—Waste of oil and gas below ground by unnecessary intrusion of water into the producing formations, thus trapping oil and preventing its ultimate recovery.

(3)—Waste of gas due to avoidable high gas-oil ratios brought about by flowing wells wide open, which reduces the natural formation pressure. This is not only a waste of the gas but leads to a waste of the oil by reducing the ultimate production.

(4)—The unnecessary waste of gas in general.

Proration agreements of some sort, it was pointed out by Mr. Barrows, are in effect in the following Texas fields: Hendrick pool, Winkler county, effective May 5, 1928; Yates field, Pecos county, present agreement effective July 1, 1928; Howard-Glasscock counties, effective Aug. 15, 1928; Gray County pool, Texas Panhandle, effective Dec. 22, 1929; Darst Creek field, Guadalupe county, effective Dec. 16, 1929.

To the foregoing should be added the first large scale unitization plan in the Van area of East Texas.

The essential difference in prorating practice of the several areas mentioned, aside from details of application, is that some fields are functioning under direct orders of the railroad commission and some by voluntary agreements among the operators themselves, without assistance of specific orders from the commission. Those under commission orders are the Winkler, Yates and Howard-Glasscock fields.

MR. BARROWS referred to the attitude of operators towards proration as follows:

"It has been said by individual operators that proration plans are not for the best interest of the small operators but serve only the large operators in permitting him to stabilize his operations and proceed in an orderly manner at the expense of his smaller neighbor.

"One individual operator told me that he did not want to see the industry stabilized, that he profited most from its wide fluctuations, by the rush and scramble which followed new discoveries, as he could get under way quicker and take advantage of such opportunities as presented themselves, producing and selling the oil before the excess production had a chance to affect the prices; and that when prices were depressed, as a result of this flush production, he went fishing and waited for another opportunity.

"An Independent refiner told me that he also welcomed periods of depression and low prices, which enabled him to contract for and purchase crude advantageously, and that his profits were greater even in the face of a depressed market price for refined products.

"Such views are purely selfish and personal ones and are not to be con-

sidered plan for the greatest good of the greatest number."

Continuing, Mr. Barrows referred to proration as permitting of "sane and orderly development in the most efficient way, eliminating the inefficiency that always goes with excessive speed.

"It leads to the drilling of only a sufficient number of wells to properly and efficiently drain the producing area. It eliminates the necessity for above-ground storage and leads to the construction of only sufficient pipeline capacity to take care of the current production, which will be extended over a much longer period at a uniform rate.

"It gives time for careful and scientific study of conditions in the fields and allows for corrective measures to be applied which will insure production of the ultimate barrel of oil at the least cost. It conserves the gas pressure, reduces the gas-oil ratio thereby preventing waste, both physical and economic.

"Boom conditions, with all their undesirable features, which in the past have been generally incident to new discoveries, are practically eliminated; and supply houses, as well as labor, including contractors, have assurance of fairly steady and uniform business leading to stability."

Mr. Barrows held that the small operators benefit at less cost to him by the experiences and practices of his larger neighbor, brought about by study and research; and, therefore, he said, the efficiency of operation for the small operator, with his limited resources, is on the same plane as that of his larger neighbor.

"The royalty interest benefits in proportion due to the increased recovery, the owners only possible objection being that the returns are spread out over a longer period," he said. "He is compensated by a higher price for his interest.

"These benefits have been particularly emphasized in the Yates field, where with a total recovery of approximately one-tenth of the estimated ultimate production, the operators probably know more about their wells and general subsurface conditions than operators in most fields, not under proration rules, know when 75 per cent of the oil has been removed.

"Gas-oil ratios are being continually lowered and are approaching the ideal condition, which is production of gas equal to that dissolved in the oil at the pressure existing in the well."

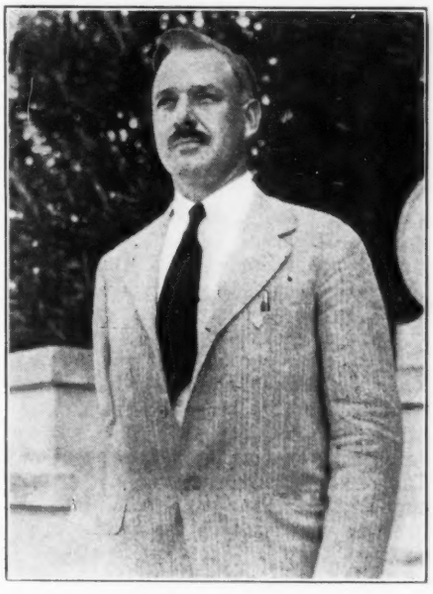
Mr. Barrows pleaded for adequate legislation to clarify the legality of extension of Texas prorating practice beyond its present limits, referring to statutory bars as responsible for the state's over-production offenses of the past and present. In passing, he also referred to sympathetic support and assistance given the industry in its conservation work by the railroad commission.

Walter H. Meier Again Heads Southwestern A.P.I. Group

Staff Special

MIDLAND, Texas, April 11

WALTER H. MEIER, chief engineer of the Atlantic Oil Producing Co., and the affiliated Atlantic Pipeline Co., Dallas, was re-elected chairman of the southwestern district of the American Petroleum Institute division of production at its spring meeting in Midland, April 10.



Walter H. Meier

Mr. Meier had previously served in that capacity a few months, having been appointed district head of the organization when Alex S. Feild resigned from the Shell Petroleum Corp., to take up selling activities with the Naylor Pipe Co.

Under the reorganized plan of district control in the production division, four vice chairmen for southwestern territory were elected. They are E. W. Bissett, Skelly Oil Co., El Dorado, for South Arkansas and North Louisiana; Melbert Schwarz, Rio Bravo Oil Co., Houston, for Gulf Coastal Texas and Louisiana; Charles W. Alcorn, Shell Petroleum Corp., Midland, for West Texas and New Mexico; E. V. Foran, Fain-McGaha Oil Co., Wichita Falls, for North Texas.

E. Stanley Durward, a research engineer for the Shell Petroleum Corp.'s central division, with headquarters at Dallas, was elected secretary-treasurer of the southwestern district, succeeding Mr. Foran.

An advisory committee composed of 18 executives of operating companies in the district was elected to serve as a board for final decisions on problems meriting their attention. This committee is composed of W. L. Todd, production vice president, Simms Oil Co., Dallas, as chairman, and the following members:

Warner Clark, southern manager, the California Co., Dallas; E. G. Allen, central division general superintendent, Shell Petroleum Corp., Dallas; T. J. Donoghue, vice president, The Texas Co., Houston; J. D. Collett, individual operator, Fort Worth.

Charles Fitzgerald, Pure Oil Pipeline Co., Dallas; Frank Yount, president, Yount-Lee Oil Co., Beaumont; F. Ray McGrew, vice president and general manager, Standard Pipeline Co., Inc., Shreveport; John R. Suman, director and general production executive, Humble Oil & Refining Co., Houston.

E. J. Marston, president, Texas Pacific Coal & Oil Co., Fort Worth; M. B. Sweeney, general production superintendent, Sun Oil Co., Dallas; James Hatcheson, vice president and general manager, Rio Bravo Oil Co., Houston; Roy B. Jones, president, Panhandle Refining Co., Wichita Falls; Underwood Nazro, vice president, Gulf Production Co., Houston; E. H. Blum, vice president, Atlantic Oil Producing Co., Dallas; Frank V. Faulkner, production vice president, Magnolia Petroleum Co., Dallas; B. S. SoRelle, Texas division manager, Pure Oil Co., Fort Worth; and Robert R. Penn, president, Penn Oil Co., Dallas.

Report of Mexican Well Is Erroneous

TULSA, April 12.—Press dispatches of April 8 crediting the Mexico-Ohio Oil Co. with having opened a new field in Coahuila, Mexico, were declared by officials of the company to be without foundation. The report was given circulation by the Associated Press and on the strength of the rumor of company's stock, listed on the New York Curb, went up nearly five points. The company is affiliated with the Ohio Oil Co.

The only thing that could have started the rumor was the finding of a small show of gas and oil in a test being drilled by the American Smelting & Refining Co., near Cloete. The Mexico-Ohio's test on the Trevino parcel is drilling at 4360 feet with nothing showing. Its Aldamas test is setting 12½-inch casing at 1500 feet.

The report, widely published, said the well was making 20,000 barrels per day.

Storing Natural Gas Underground In Depleted Structures

By V. B. Guthrie
N. P. N. STAFF WRITER

ECONOMIC possibilities and practical problems in connection with storing natural gas in underground reservoirs—depleted gas and oil fields—were discussed at the meeting here April 7 of the eastern production division of the American Petroleum Institute.

While the subject was presented entirely from the technical standpoint of the geologist and engineer, a layman may perhaps be pardoned for visioning in this possibility another phase of the tremendously expanding business of distributing natural gas.

That expansion so far has materialized in bringing natural gas from the Texas Panhandle to Denver and other places in Colorado, which was hardly considered seriously only a few years ago. It has made natural gas from the vast reserves of northern Louisiana available to people in Memphis and Birmingham. It is almost certain to materialize in the tapping of Texas Panhandle reserves for Chicago consumers.

National Hookup of Natural Gas Lines Is Seen

Is there any reason to believe this expansion of the distribution of natural gas will stop here? Sometimes, perhaps, eastern distributing systems, now expanding in themselves with the discovery of new gas supplies in eastern fields, may be hooked up with the gas lines of the middle west, and it is within the realm of possibility that natural gas from the Mid-Continent may reach consumers in New York City.

Even greater than this, it is possible that some day the distribution of manufactured gas may be practically supplementary to natural gas, the distributing system being controlled by a group of public utility or other interests.

Such a general gas distributing system has been even talked of as linked up with the coal mines of the east so that, as a part of the same system, when the time is ripe, gas can be manufactured from coal at the mines and piped to markets, which procedure is said to be cheaper than transporting coal by rail, or even manufacturing electric power at the coal mines and transmitting it to the big industrial centers.

Long distance carrying of natural gas by pipe line makes some kind of storage within a reasonable distance of distributing points advisable, speakers at the Pittsburgh meeting pointed out.

"This is the day of long transmission lines," said S. W. Meals, president of the Carnegie Natural Gas Co., Pittsburgh, who read a paper on, "Storing Gas in Earth's Natural Reservoirs." "The point of consumption may be hundreds of miles from the source of production, so that some kind of storage becomes necessary. Then, why not have the fuel bin where nature has provided?

"There are many of these porous domes, which at one time held high pressure gas in large volumes, that today are empty, still free from water and needing only the openings cleaned to receive the re-pressuring fuel, whether that be natural gas or a clean and purified manufactured gas."

Aboveground Gas Holder Capacity Inadequate

Mr. Meals went on to point out that the steel gas holder capacity in this country today is about two billion cubic feet, whereas gas to the volume of eight billion cubic feet has been stored in one underground reservoir in central Kentucky alone. The modern waterless type gas holder costs about $100 per thousand cubic feet capacity to erect, said Mr. Meals.

Mr. Meals said that closer co-operation between oil and gas operators, land owners and the mining departments of the various states would be required to insure for the gas companies the use of depleted oil and gas fields as natural storage basins for gas. He said that state legislation should be enacted regulating the drilling and plugging of wells so that the structures underground might be protected as reservoirs. He bespoke for research work to determine the type of structure best fitted for underground gas storage.

Other speakers discussing the paper presented by Mr. Meals saw for the gas company, in the use of underground storage, a means of protecting producing properties and transmission lines from the fluctuation in demand at consuming points. It was pointed out that such reserves could be drawn on in times of peak demand, as from a sudden cold wave, in place of producing wells at greater rates than most efficient and putting ...ly high pressure on lines to move through them the volume of gas ...eded to meet demand. On the other ...nd, i was said that, when such peak demand suddenly declined, the excess gas in the company's lines could be stored in the reservoir and the gas company would not be required to fluctuate the production of its wells to as great an extent as at present.

Type of Geological Structure Suited for Reservoir

George E. Welker, president of the United Natural Gas Co., Oil City, described the type of geological structure his company believed served best as a gas storage reservoir. He cited the Turner Valley field, in Alberta, Canada, where he said 200,000,000 cubic feet of gas daily was being wasted, whereas, within 100 miles there is available for gas storage a depleted gas field now partly flooded with water.

Mr. Welker said he believed the next few years would see many gas companies searching for available underground reservoirs.

J. H. Newlon geologist, Philadelphia Co., Pittsburgh, said that in considering the use of underground structures for storing gas several economic factors must be taken into consideration. He said the costs involved in acquiring control of such reservoirs, in building transmission lines to them, in putting in new compressors and other equipment, must be carefully weighed against the expense to the company of its present method of meeting peak demand on its producing and transmission system. He said that means must be worked out whereby the gas company could be in complete control of the storing and withdrawal of gas, or whereby two or more gas companies could co-operate in the operation of the same gas reservoir, metering the amount of gas stored and withdrawn and paying operating costs on the relative basis of the amounts of gas involved.

Water Encroachment Does Not Ban Structure

I. I. Gardescu, University of Pittsburgh, said that a depleted field in which water had encroached was not necessarily a poor gas reservoir.

At the same meeting a paper on methods of taking and testing cores from wells in eastern fields was presented by Dr. Charles R. Fetke, Car-

negie Institute of Technology, Pittsburgh. Dr. Fetke stated that core drilling was necessary where rejuvenation projects were being considered in oil fields or where depleted structures were being studied with a view to storing natural gas in them. He said core study could be used to supplement methods of estimating gas supplies in new fields, that it could be correlated with actual operating experience in shooting wells, properly placing packers, determining the oil content of reservoirs and whether the sand in the structure would respond to water flooding and so on. He described the various laboratory tests made on cores.

The afternoon session of the Pittsburgh meeting, was presided over by E. L. Estabrook, Pan American Petroleum & Transport Co., chairman of the eastern production district. At the morning session, J. French Robinson, Peoples Natural Gas Co., Pittsburgh, vice-chairman, presided.

In the afternoon H. R. Pierce, associated with Dunn & Lewis, Pittsburgh, presented a paper on "Oil and Gas Reserves." Dr. R. E. Somers, geologist, Gulf Oil Co., Pittsburgh, also discussed this subject.

A history of methods of drilling and operating small wells in the east was given by P. H. Curry, vice-president, South Penn Oil Co., Pittsburgh. In discussing his paper, James H. Dye, formerly a production manager with the Pure Oil Co., now sales manager, International Derrick & Supply Co., Pittsburgh, said the most important factor in operating small oil properties was to have in charge an individual with an eye for profits. In the older fields, he said, the oil company cannot control the size of the well, so it must determine that operating costs are as low as possible and then abandon the well if it cannot be operated at a profit. All moving parts on the lease should be kept well lubricated to reduce friction and material should be properly cared for, such as stored pipe having thread protectors on each joint, he said.

Speaking on "Economical Operation of Small Gas Wells," H. H. Phillips, T. W. Phillips Gas & Oil Co., Butler, Pa., said the graded form of lease, by which the royalty is based upon the size of the well, is most desirable from the oil company's point of view, since it avoids the necessity of the endeavor by the company to secure a reduction in the royalty being paid when the production of the well declines to the point there is a question as to whether to keep the well producing or abandon it.

"Another feature in the lease which is essential in the case of the small well is limiting the amount of free gas to a reasonable figure," said Mr. Phillips. "Unlimited free gas has sometimes proved to be very wasteful and costly and in some cases it has caused the abandonment of small wells."

Carl A. Young, general secretary of the production division, spoke on the advisability of a sectional advisory committee for the eastern district, as a point of contact and correlating body for all the work undertaken by the eastern section. A resolution to this effect was adopted later and a committee appointed. New officers for the district were elected. John C. Askam, Ohio Oil Co., Findlay, Ohio, a vice-chairman of the district, reported on general conditions in Ohio, Michigan and Illinois.

Storing Gas in Earth's Natural Reservoirs

By S. W. Meals

President, Carnegie Natural Gas Co.

(Presented before Eastern District, Production Division, American Petroleum Institute, Pittsburgh, April 7)

STORING gas in depleted oil and gas sands is not only a conservation measure but will prove a great help as an operating convenience to gas utilities by providing a means for meeting peak demands on the system, thus assuring consumers a uniform and full supply of fuel at all times.

The aim of a well regulated utility, and in fact the pivot of its success, is competent and adequate service to its consumers. In order that a natural gas company may give its customers perfect service 365 days a year, it is compelled to maintain a supply of gas sufficient to meet the maximum peak hourly demand and must have it ready for instant use whenever the consumer opens the valve at the point of consumption.

As the utility cannot regulate the weather, it must so regulate and operate its well, compressing plants, transmission and distribution lines to meet weather conditions. If the temperatures fall 10, 20 or 60 degrees, a sufficient supply of gas must be at the valve for the customers, or complaints will make business for the telephone company.

For a number of years several of the larger gas companies have been storing natural gas in partly depleted gas sands; several of the larger oil companies have been re-pressuring partly depleted oil sands to increase the production of oil. At present oil operators in the Bradford field are injecting hydraulic water pressure into the sands to increase the recovery of oil. The majority of these undertakings have proven not 100 per cent successful but in many cases the results have been over 500 per cent. In the latter cases, however, the success usually can be traced to a careful study of the property by competent engineers.

Natural gas has been classed as a fugitive commodity—difficult to secure, confine or handle; its possession is not certain as to quantity or duration. Even our courts have compared it to wild birds which fly away. Perhaps past history proves the indictment, yet proper value of a commodity tends to the conservation of that commodity. Gas companies in the east have passed their day of wastefulness and are now practicing conservation in every department of their operations.

That the industry may better serve its consumers, expenditures of time and money are provided for investigation and research work. Operating officials are giving thought and study to the problem of using earth's "natural reservoirs" for the storage of gas, in order that the utility may have a surplus supply of fuel ready to meet the demand of its customers.

This is the day of long transmission lines—the point of consumption may be hundreds of miles from the source of production—so that storage of some kind becomes a necessity. Then, why not have the fuel bin where nature has provided? There are many of these porous domes which at one time held high pressure gas in large volumes, that today are empty, still free from water and need only the openings cleaned to receive the re-pressuring fuel, whether that be "natural" or a clean and purified "manufactured" gas.

If one company with only a few wells can store two or three hundred million cubic feet and is able to withdraw 10 million cubic feet per day with only 50 pounds differential above line pressure, and another company stores about eight billion cubic feet with less than 80 pounds pressure on the storage—why should we hesitate to take advantage of convenient storage domes?

The United States Bureau of Census figures show that in 1927 the

New Officers

New officers of the eastern district of the production division of the American Petroleum Institute, elected at its meeting at Pittsburgh April 7, were:

Chairman: J. French Robinson, Peoples Natural Gas Co. Pittsburgh.

Secretary-treasurer: J. H. Newlon, geologist, Philadelphia Co., Pittsburgh.

Vice Chairmen: H. H. Hill, Standard Oil Co. of New Jersey, New York; J. B. Montgomery, Jr., United Natural Gas Co., Oil City; L. J. Pepperburg, Columbia Gas & Electric Co., Columbus, Ohio; and Paul D. Torrey, consulting geologist, Bradford.

Members of the new district advisory committee are: S. W. Meals, Carnegie Natural Gas Co., Pittsburgh, chairman; P. H. Curry, South Penn Oil Co., Pittsburgh; Frank Brewster, Belmont Quadrangle Drilling Co., Bradford; Forest Dorn, Forest Oil Co., Bradford; Frank Schauer, Equitable Gas Co., Pittsburgh; J. B. Corrin, Hope Natural Gas Co., Pittsburgh; J. G. Pew, Columbia Gas & Electric Co., New York; B. D. Phillips, Phillips Oil & Gas Co., Butler; G. E. Welker, United Natural Gas Co., Oil City; A. W. Peake, Standard Oil Co. of Indiana, Chicago; W. J. Sinsheimer, H. L. Doherty & Co., New York; W. P. Clarke, Eastern Gulf Oil Co., Lexington, Ky.; A. E. Yahn, Messer Oil Co., Olean, N. Y.; W. J. Brundred, Brundred Oil Corp., Oil City, and E. F. Clagget, Pure Oil Co., Saginaw, Mich.

rated capacity of gas storage holders in this country was one and a quarter billion cubic feet. Since that date a large number of from five to 20 million cubic foot holders have been erected, making the steel holder capacity today about two billion cubic feet. It would require about 400 20-million-cubic-foot holders to store the amount of gas which has been stored in the one Kentucky underground storage field. The waterless type holder costs about $100 per thousand to erect so you can readily see the enormous cost to store eight billion cubic feet of gas in steel storage.

To produce or permit storage, the rock must be open-grained or porous to allow passage of fluids between its particles so that, if a hole is drilled into them, they can be drained of their liquid or gaseous content. According to the Nineteenth Annual Report of Professors Slichter and King, of the United States School Survey, the pore space in sands, if formed of perfect spheres of equal diameters placed at a minimum distance apart, is 25 per cent and at maximum distance 47 per cent.

This porosity is constant irrespective of the size of the grain. If a cubic foot of sandstone, when saturated, will hold one-tenth of a cubic foot of oil or water, such sand is said to have a porosity of 10 per cent, inasmuch as one-tenth of its volume is pore space or voids. One cubic foot of gas sand, having 10 per cent porosity at 150 pounds above vacuum or 10 atmospheres at sea level, will hold one cubic foot of gas and in variations from this pressure, the volume would follow Boyle's law. If we drill a six-inch hole through 10 feet of pay sand with 10 per cent porosity, we uncover 226 square inches of pore space in the walls of such well, or about eight times the well area.

To estimate on the probable supply of gas from any given pool or area, the following factors would have to be known:

1. The area covered by the gas bearing rock,
2. The average thickness of the gas pay sand,
3. The average rock pressure, and
4. The average pore space in the gas bearing rock.

Factors for Approximating Pore Space in Structure

The first factor may be defined by dry wells drilled, or perhaps by carefully geologizing the territory; the second after wells have been drilled through the formation; the third can be had by averaging the direct pressure from various wells; the fourth (pore space) cannot be directly measured unless cores are taken, but by observing the rock pressure at two periods of time, sufficiently apart, and knowing the volume of gas produced, this factor can be closely approximated. Should there be water in the formation the rise of water in the same should be measured.

If, in a given pool, the average rock pressure last January was 300 pounds, or 20 atmospheres, and in January of this year 270 pounds or 18 atmospheres, we have used two atmospheric pressures or one-tenth of the total gas in a year. If one billion cubic feet were used or withdrawn in the year, we could safely estimate that nine billion cubic feet is left in the sand. The volume of gas which may be produced from one acre depends on the rock pressure, the thickness of the pay sand and the porosity. Volumes of from four to 20 million cubic feet per acre have been recorded.

If we wish to calculate the volume of gas which may be stored when conditions are as above mentioned, we simply reverse our equation; that is, if by withdrawing one billion cubic feet of gas the rock pressure is lowered two atmospheres, we can be reasonably sure that to increase the rock pressure two atmospheres it will require one billion cubic feet of gas and, unless there is leakage or water encroachment, we simply follow Boyle's law. For instance, I am informed in a Kentucky storage 218 million cubic feet withdrawn reduces the rock pressure one pound and this amount injected increases the rock pressure one pound. This is a perfectly tight storage which is an important factor in selecting your storage bin. Other factors to be considered in the selection of a storage field are:

Defining the area of the pool,
Thickness of the pay sand,
Original rock pressure,
Volume of gas which has been removed,
Present rock pressure,
Porosity of the sand, and
Condition of the sand as to water encroachment.

Utilities should cooperate with the state geological departments and the engineering departments of our schools and colleges in their studies and efforts to secure a correct correlation of producing sands. Core drilling of sands, in order to study the variations in porosity, thickness and lateral extent of the producing formations, will prove of much value to operators and will also aid the student in his research work.

If a careful study were made of our gas sands and gas pools, the industry would be in better position to estimate gas reserves. After the famous Foster-Brendel well near McKeesport, Pa., was drilled in 1919, the state geologist under the supervision of J. French Robinson, made a very thorough study of the McKeesport pool. He was able to define its area and made the estimate that 20 billion cubic feet of gas might be expected from this area. The gas produced was all metered and, when the rock pressure had been reduced to vacuum, 20 million cubic feet were withdrawn.

Many good gas and oil formations have been damaged and some of them actually ruined by improper plugging of wells. Fuel of inestimable value has been lost to future generations by man's carelessness, yet nature has its own way of sealing these sore

(Continued on Page 46)

New Pools in Two States Indicated By Late Wildcat Completions

By William F. Lowe
N. P. N. STAFF WRITER

TULSA, April 12

THE Texas Panhandle again leads the field in Mid-Continent wildcat reports for the current week, as Moore county assumes a new importance with a big new producer. Oklahoma and Kansas are not far behind, however, for outlying wells in both states have performed even better than expected.

In Oklahoma, the Chandler area is the hot spot with a well that looks like it would make 5000 barrels extending the west portion of the territory. Three miles west of the Asher pool in Pottawatomie county, 22-6N-3E, a well in the Cromwell sand had rather a surprising initial and raises hopes of a new pool. Oklahoma City continued to do the usual thing by bringing in an average of one big one a day while the Seminole area was unusually quiet.

In Kansas the wildcats occupy the entire stage as far as current news is concerned, and though none of these is of startling size they are in important locations. Harvey and Edwards counties registered hits that indicate the western part of the state to be a little less barren than was first supposed.

The Voshell pool was in the throes of taking new potentials to begin a serious proration schedule that would offset the big production found recently in the Siliceous lime. Its total potential from the present 31 completed wells is 34,778 barrels which is more than double the pipeline capacity. Only 22 of these wells are producing from the Siliceous though it is quite possible that they all will be by the end of the week.

Moore County Wildcat Adds Interest in Panhandle

The showing made by the No. 1 Jones, section 164 Block 3-T, T&NO Survey, in Moore county, Texas, has more than set the wheels moving in the Panhandle. The well is a joint operation of the Operators Royalty Co., Sunray Oil Co., Barnsdall Oil Co., and the Dana Oil & Gas Co. From this impressive array of owners it would seem that confidence in the area had not been any too strong originally. There was some justification for caution in that part of the county for there seemed little to indicate that production was liable to turn in that direction.

However, there has been an abiding suspicion for over a year that another oil pool was in that general neighborhood. The old Morton well, two miles to the southwest in Sec. 191, has never been adequately tested because there has been no pipe line nearer than the eastern border of the county. This condition is due to be changed in the very near future because of the Operator's well, and the result is going to be very interesting.

Bottomed in a dolomite pay at 3406, the new well began producing at the rate of 100 barrels per hour. The oil pay was topped at 3336 and the big gas, estimated at 50,000,000 cubic feet, was above at 3050. Later drilling carried it to 3410 where it showed water and it is being plugged back. Though the well is not the largest found in the county it is by far the most important since the discovery of the Armstrong-Byrd pool, and will probably result in the early development of a new area.

Big Wilcox Sand Well In Chandler Area

The west Chandler area of Lincoln county, Okla., made a spurt this week with the completion of the Magnolia Petroleum Co., No. 2 Benedict, NE SE NW, 7-14-4E. The well topped the Simpson at 5077 and at 5086 flowed 155 barrels of 41 gravity oil in 45 minutes. This is the largest Wilcox well in the area as well as being one location further north than the few other producers in the same section. The No. 1 Benedict of the same company is producing around 100 barrels of higher gravity oil from the Layton sand found from 3315 to 3344, though it may be deepened to the lower pay.

In 8-14-4E, the No. 2 Decker of the Magnolia, blew in from the Simpson making 1622 barrels in six hours, the pay being topped at 4670. Both the No. 2 Benedict and the No. 2 Decker are unusually large wells for the Chandler area and it is not yet decided whether they represent one large pool or two distinct producing spots with a geologic saddle between. Present indications are that the latter is more likely the case for there is a well at approximately the half way mark which logged lower than the wells on the east.

A new Cromwell producer came in this week in a reworked wildcat of Pottawatomie county, Okla. With a hole full of water in the Wilcox from 4273 to 4278, the No. 1 Bullock of the Payne Drilling Co., SE NE 22-6N-3E, plugged back and ripped the casing from 3505 to 3510 in the Cromwell sand. A swabbing test was made which resulted in 800 barrels of 43 gravity oil in 24 hours. The well is three miles west of the Asher pool and three offsets are already moving in.

With the closing in of the wild Mary Sudik well in the south end of the Oklahoma City pool, new rigs started going up in real boom style. There are now 73 active locations within the radius of one mile from the former unruly well of the I.T.I.O. Production for the pool is averaging about 120,000 barrels per day from some 40 wells, permitted to produce at a time.

In Garfield county the Continental Oil Co., opened a new Simpson pool with its No. 1 Brown in NE SW SW, 10-20-4W, when it made 150 barrels of 46 gravity oil in 25 minutes from dolomite found from 5806 to 5820 TD. The Simpson was topped at 5730. The well is four miles north of Marshall in the southeastern part of the county and is a rank wildcat. The same company has another well one half mile west in 9-20-4W, that was stopped short of the Viola at 5725 but the hole is in good condition and is now being rigged up to deepen.

Harvey County Yields New Well of Importance

Another wildcat of the first order was found in Harvey county, Kansas. It is the property of the McPherson and Shell Companies and is located in the SW NW, 36-33-2W. Flowing 315 barrels of oil in 24 hours with a quarter million gas, the well looks like a new area was located south of the Voshell pool of McPherson county. The pay is in the Chat from 2970 to 3217 and the gravity of the oil is 35 at 84. It is cutting 3 per cent.

In Edwards county, the No. 1 McCarty of the Barnsdall Oil Co., C NW NW NE, 31-25-17W, is the best well yet found in the county. Its pay is in the basal Pennsylvanian conglomerate from 4530 to 4536 and though its initial production of 335 barrels the first 24 hours is fairly

satisfying, it is quite probable that the well will be deepened. The oil is of 37 gravity. Storage tanks to accommodate 2000 barrels are being erected to give the present pay a thorough test. If the Dixie-Amerada test, three miles northeast of this well in 22-25-17, makes as good a showing, an extensive drilling campaign may develop and pipe lines be laid into the area. The latter well is logging high and looks like it might make a producer.

McPherson county's fourth oil pool possibility, the Mid-Kansas Oil Co. No. 1 Pitts, C SW SE, 2-19-2W, looks a little better this week at least as far as amount of oil is concerned. The well was originally bottomed at 2972 in the Chat from which it swabbed 120 barrels in nine hours. It was deepened to 2990 and its production stepped up to 95 barrels in two hours but it is cutting two per cent. The pool may not be there after all.

Hoover's Public Land Policy Overturned in Court

WASHINGTON April 14.—The Hoover policy of no exploration for oil or gas on public lands, announced March 12, 1929, has been overturned by the Supreme court of the District of Columbia.

Justice Bailey has issued writs of mandamus to Secretary of the Interior Wilbur requiring him to reinstate in the files of that department applications for permits filed by Richard D. Vedder in California, and Roy C. Bartan in New Mexico and thereafter to proceed in accordance with the national leasing act of February 25, 1920. Other cases of similar character are pending.

Indications were given at the time of hearing that the writs would be awarded. Their issuance then was withheld at the request of the department of Interior because its attorneys desired to file briefs in which they hoped to persuade the justice that his plainly indicated views on the matter were clearly not within the four corners of the law governing the subject. The cases will be taken to the higher courts, so that the litigation may be pending for a year or more.

In substance Justice Bailey held that Secretary Wilbur had repealed the act of 1920, which, the justice said, was intended to promote the mining of coal, phosphate, oil, oil shale gas and sodium on the public domain.

"Its purpose is clearly to promote the prospecting of oil, gas, etc. on public lands not theretofore known to be productive of minerals of this character," said Justice Bailey. "Section thirteen of this act provides 'that the Secretary of the Interior is hereby *authorized*, under such necessary and proper rules and regulations as he may prescribe, to grant to any applicant qualified under this act a prospecting permit.' "

Justice Bailey said that it was true that, under rules prescribed by the Secretary, it was provided that it "should be understood that under the act, the granting of the prospecting permit for oil and gas was *discretionary* with the Secretary of Interior and might be granted or denied either in part or in its entirety as the facts may be deemed to warrant.

"It is only recently, however, that the contention has been made that, under this provision, the Secretary may refuse to grant any permits at all. While it may be that the Secretary may deny individual applications as the facts may be deemed to warrant his discretion is not to be exercised arbitrarily and without regard to law.

"In my opinion this act does not give the Secretary of the Interior nor the President any such power as is claimed by the Secretary. I think that the discretion invested in the Secretary is a judicial one and not an absolute one; that the word authorized in Section 13 of the act refers to the manner of granting permits, the determination of the qualifications of the applicants and matters of that nature under the rules of regulations promulgated by him and that the decision in the Alling Case (West vs. Alling, 58 D. C. App. 329) is conclusive on this question.

"The authority given to him by Congress is that he may 'do any and all things necessary to carry out the act and accomplish the purpose of this act' and not to defeat the will of Congress by suspending its operation."

Justice Bailey said that if there was any authority to suspend the issuance of permits it was to be found in an act of Congress passed in 1910 authorizing the President to withdraw any part of the public domain from settlement. But as to that, the Justice said it was sufficient to say that the action of the Secretary, in denying any permits did not constitute a withdrawal under that act. He further said that it could not be held to be such a withdrawal for it did not appear to be of a temporary nature or for any of the purposes of the act of 1910.

"In addition," continued the Justice, "it may be said that it is by no means clear that the President has authorized the Secretary of the Interior to make the withdrawal. The latter based his authority upon a newspaper report of a statement made by the President and does not set up any direct order of the President to himself either orally or in writing.

Storing Gas

(*Continued from Page* 44)

spots, as it requires very little mud or cavings to close the sand pores.

Before attempting to store gas in the sands, well openings into the sands should be carefully cleaned and cased to the top of the formations expected to be used as storage bins in order that no water, salt, tarry substances or cavings are forced into the sand pores to hinder the free flow of gas into the formation.

Manufactured Gas May Be Stored

Manufactured gas can be stored as readily as natural gas, provided it is thoroughly cleaned of all tar and dust. Proper cleaning of manufactured gas is the problem hardest to solve; however, with up-to-date cooling installations, after the gas is compressed, about 90 per cent of the dust and tar is removed and with the use of the Cottrell precipitators, all trace of tar may be eliminated.

Closer cooperation between the oil and gas operators, land owners and the mining department of the states will be required in order that the gas industry may secure and use these wonderful natural storage basins. As a matter of conservation, the governing bodies of our states should see that proper legislation is enacted to regulate drilling and plugging of wells that these valuable reservoirs may be protected. Appropriations should be granted to our institutions for the purpose of furthering research and study of producing sands within the state.

Some Observations On Sand Pressures

Some 35 years ago, the South Penn Oil Co. drilled a well south of Mannington, W. Va., which produced 60 barrels of oil per day from the Gordon sand. Sometime later a well was drilled on the Morgan farm about two miles southwest of the 60-barrel oil well. The Morgan sand and, in attempting to "shut in" the well, a string of pipe was dropped into the well.

Almost a year passed before the well was finally "closed in." During that time the production of the oil well had decreased until it was producing only five barrels per day but when the Morgan well was "closed in," the production immediately increased until it reached its original production of 60 barrels per day. The Morgan well, together with the gas wasted from the oil field, reduced the rock pressure in this formation (the Gordon sand) to 150 pounds over an area about 10 miles long by one mile wide. Wells found in sands above the Gordon had rock pressures as high as 700 pounds but if the drill reached the Gordon sand, and the sand produced gas from this formation, only 150 pounds rock pressure was found.

ADVERTISING PAGES REMOVED

THE land leasing board of the University of Texas broke out in a new spot, through one of its members, the Hon. Edward Crane, of Dallas. A gigantic conspiracy among oil companies to refrain from bidding for leases on university lands where a one-sixth royalty is demanded has been sniffed out by Mr. Crane. He demands that the governor do something about this hideous state of affairs.

To the thousands who are waiting anxiously to see what this column has to say about it we hasten to remark that a conspiracy of that kind would be about the right thing. It would be a firm stand against the tendency of all government, local and national, to aggrandize itself at the expense of business and to insist upon a better trade always than the citizens, in their private capacities, are willing to make.

The royalty on oil produced on privately owned lands is uniformly one-eighth and that has been considered through all these years to be plenty for the man who contributes nothing to the enterprise except the land. The hazards of the producing business grow each year, the dry hole record gets larger. Hurray for the conspiracy, say we.

* * *

Hale B. Soyster, who has been supervisor of the Muskogee district, U. S. Geological Survey's department of administration of leased public lands, has left for Casper, Wyo., where he succeeds Jack Steele, who resigned as supervisor of the Rocky Mountain district to enter foreign service with the Sinclair Exploration Co.

Mr. Soyster, a native of Minnesota, found his way at an early age to California where he worked for a number of oil companies. Among them were the Kern River Oilfields, Ltd., the Richfield Oil Co., then the Central Refineries, Orange County Drilling Co. and the Pat Welch Oil Co. He was graduated from the University of California in 1922, majoring in geology, and served as chief geologist for the Superior Oil Co. of California.

He entered the service of the U. S. Bureau of Mines at Bartlesville in 1924. Back in those times the Bureau had charge of the enforcement of regulations on public land. Mr. Soyster worked out of various sub-offices of the Bureau. The Geological Survey obtained title to him in 1925 when the transfer of this administrative work was made from the bureau. He went to Muskogee in July, 1926, as acting supervisor and the next year was invested with the full title.

While in Oklahoma his work was practically confined to that state, he will have a vast territory to supervise at his new post of duty. A half dozen states are included in the area of activity which comes under the Rocky Mountain division.

John M. Alden is the quite competent successor to Mr. Soyster at Muskogee. He comes from Taft, Cal., where he has been assistant to R. C. Patterson, the supervisor. He also was a Bureau of Mines man who went over via selective draft to the Survey.

* * *

Died: Near Bartlesville, Okla., in auto accident, Robert Kane, 18 years old. He was the son of John H. Kane, executive vice-president of the Phillips Petroleum Co.

Hale B. Soyster

J. S. Warren, of the Maloney Tank Manufacturing Co., has been re-elected president of the Tulsa Traffic Association. D. M. Boylan, of the Hill, Hubbell & Co. (paints, pipe coatings, etc.) is one of the vice-presidents.

* * *

John M. Wheeler, director of the Operators Oil Co. and the Operators Royalty Co., has been elected a director of the Producers National Bank, Tulsa.

* * *

At last there is a good road from Tulsa to Oklahoma City. The 133 miles are all either graveled or paved. This is by way of Guthrie and Cushing. Work is still going on on the more direct road through Chandler.

* * *

H. F. Sinclair elicited the applause of the people of Independence, Kans., his old home town, when he offered financial assistance in straightening out the tangled affairs of the Commercial National Bank, which recently failed. W. S. Fitzpatrick, chairman of the board of the Prairie Oil & Gas Co., is playing a prominent part in the bank's reorganization.

* * *

Albert S. Clinkscales, formerly of the White Eagle Oil & Refining Co., has been elected a director of the Kessler Petroleum Corp., Oklahoma City, and will be in charge of land matters and geology. Mr. Clinkscales is well known in geological circles of the Mid-Continent, having served with several of the large companies.

* * *

The chief hero of the Schurr, or Raymond pool, of southwestern Rice county, Kans., seems to be C. O. Miller, of Wichita. That is, of course, to measure heroism by acreage position. Mr. Miller formed the block on which Steinbuschel & Hilligoss (Gosh, what a mouthfull!) drilled the discovery well. They later sold to Slick, Pryor & Lockhart.

Mr. Miller wound up with twenty-one 80-acre tracts in the vicinity, a one-sixteenth interest in the discovery well and much other acreage in the general vicinity. He came to Kansas in 1917 as manager of the Peerless Oil & Gas Co., composed of Rochester, N. Y., interests, to take over and complete the old Souy well in the Cheyenne Bottoms, of Barton county.

The Peerless sold out its Kansas interests in 1927 and left the state. Mr. Miller stayed and got into the leasing game. He turned enough deals as he went along to keep going. Now he seems to be in line for considerable return for his work.

* * *

New officers of the Tulsa Purchasing Agents Association are: William R. Brown, Transcontinental Oil Co., president; Harold B. Ward, H. F. Wilcox Oil & Gas Co., first vice-president; Glenn H. Gagaines, Gypsy Oil Co., second vice-president; H. D. Patridge, Indian Territory Illuminating Oil Co.,

national director; C. A. Prichard, Mid-Continent Petroleum Corp., alternate national director; H. M. Cosgrove, secretary-treasurer and E. R. Welch, assistant secretary-treasurer.

Messrs. Brown and Cosgrove will make preliminary moves toward forming a purchasing agents association in Wichita shortly, to be affiliated, as is the Tulsa association, with the National Purchasing Agents Association.

* * *

One of Tulsa's best known characters in the equipment business is back for a protracted stay. Roy Gwynne, manager of pipe sales and gas executive of the Jos. Greenspon's Sons Iron & Steel Co., of Tulsa, St. Louis and New York, has completed some special work which he was handling for the company east of the Mississippi and has settled down at his Tulsa desk.

Mr. Gwynne is one of the big army of Bradford folks who reached Oklahoma via the fields of Indiana and Illinois. Before joining the Greenspon company he had put in 17 years with the Standard Oil Co. of Indiana, Gulf Pipe Line Co. and Gypsy Oil Co. In this time he gained experience in refinery construction, producing and office management and ended his service with the Gypsy as purchasing agent.

* * *

Rex Dawson, of the Carter Oil Co., doubts that the increasing use of gliders, or sailplanes, will help the gasoline situation much.

* * *

Born: To Mr. and Mrs. Henry Waters, of Tulsa, a son. Mr. Waters, or "Hank," is chief scout of the Sinclair Crude Oil Purchasing Co.

* * *

Ellick Botts, the popular ex-pumper of the Gray Horse district, wants to know what has become of the old fashioned oil executive who never mentioned price when talking of conservation.

* * *

Stewart Dewar and J. Melville Sands, vice-presidents of the Phillips Petroleum Co., have had their pictures in the paper because of having made holes-in-one at the Hillcrest Country Club, Bartlesville. Mr. Dewar's was a 133-yard poke and that of Mr. Sands was one yard longer. Those things were more impressive until a Tulsa golfer made one with his putter a few weeks back. There now seems to be a liberal portion of chance in it. (Note: We have never made one.)

* * *

A party of 13 executives of the Continental Oil Co., headed by President D. J. Moran, are making the annual inspection tour of company fields, refineries and marketing facilities.

* * *

W. H. Sappington was recently made superintendent of pipe lines in the Salt Creek field for the Midwest Refining Co. He succeeded the late H. A. Chandler.

Roy Gwynne

Several cities of the Southwest last week saw the first aerial train ever to cross the country. Capt. Frank Hawks, whose specialty is getting across the United States faster than anyone ever did it before, was the passenger in the glider that was towed behind an airplane. It made landings in Oklahoma City and Tulsa, among other points. It was an impressive glimpse of the possibilities aviation holds for the future.

* * *

Charles B. Coon, of the Sinclair Oil & Gas Co.'s land department, has been transferred from Wichita to the Tulsa general offices. He was once secretary of the old Gladys Belle Oil Co.

* * *

Harold W. C. Prommel, consulting geologist, Denver, will soon leave for Moscow. He has accepted a two-year contract with the Soviet government and will hold an important place in the petroleum geological activity of the U.S.S.R. Mr. Prommel was born in Germany but obtained part of his scientific education in this country. His work has carried him into a number of foreign countries.

* * *

Hale B. Soyster will take charge of the Rocky Mountain district of the U. S. Geological Survey mineral leasing division about April 21. He has been in charge of the Muskogee division for the past three years.

* * *

Died: In Tulsa, Robert E. Hileman, superintendent of the Cosden Pipe Line Co., transportation division of the Mid-Continent Petroleum Corp. He was 62 years old and had been in the Mid-Continent fields since 1911. His widow survives him.

A. W. Wyatt, of the land and lease department of the Atlantic Oil Producing Co., is now maintaining offices in Fort Stockton, Tex.

* * *

Press dispatches carry the news of the resignation of H. Mason Day as a vice-president of the Sinclair Exploration Co. Mr. Day was one time an executive of the Barnsdall International Corp. and carried on some dickering with the Russians relative to getting an operating concession. He has been with the Sinclair interests for the past six years.

* * *

Died: Michael A. Stanton, Shreveport. He was the founder and president of the Cypress Tank Co. and was a vice-president of the oil and gas operating company Crawford & Sebastian. He was 55 years old. His widow and three daughters survive him.

* * *

Frank Buttram, oil man, geologist and Democrat, who is running for the gubernatorial nomination in Oklahoma, has scored a masterly stroke. His campaign managers, in a booklet that comes to this desk, set forth on three different pages that when he was pitching for the University of Oklahoma baseball team he struck out Ty Cobb three times in a row. We shouldn't be surprised if that would put him over. If they could show that he made two holes-in-one in succession, the campaign would be over.

* * *

Fred Schell, Jr., has resigned as petroleum engineer for the Tidal Oil Co. to join the Prairie Oil & Gas Co. in the same capacity.

* * *

C. E. Wright, chief production engineer of the Indian Territory Illuminating Oil Co. in the Oklahoma City district, was recently married to Miss Lucy Pennybacker, of Ardmore. About the same time F. R. Wheeler, of the I.T.I.O. production engineering staff in Oklahoma City married Miss Dorothy Gordon, Chicago.

* * *

S. R. Cohagen, of the Midwest Exploration Co. land department is now living in Forth Worth.

* * *

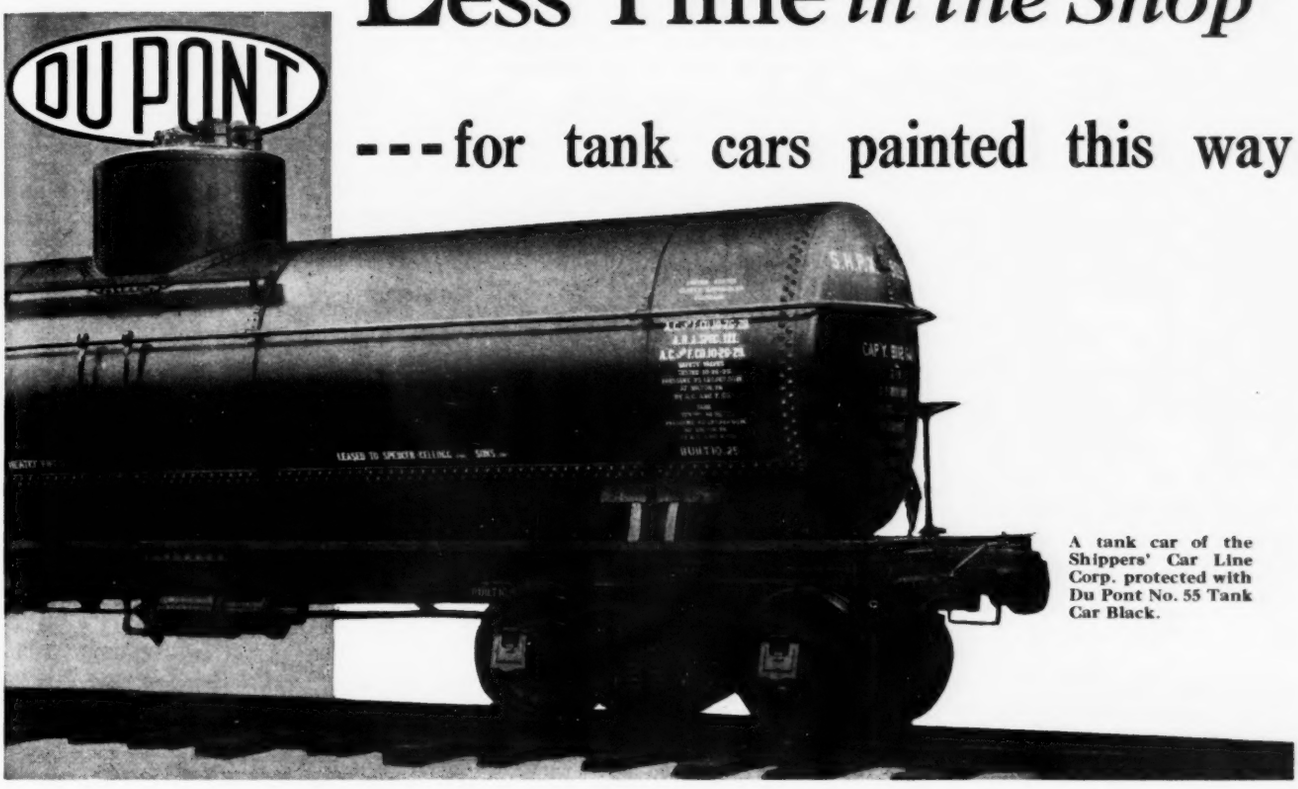
C. J. Stafford, district geologist for the Tidal Oil Co., Wichita and U. R. Lavis, geologist for the same company in the Seminole district, have resigned.

* * *

The first number of the Independent Petroleum Association of America Monthly has been put in the mails. Published as the official organ of the association that has campaigned so diligently for a tariff on oil, its No. 1 issue is devoted largely to that subject. It contains considerable of the material presented to Congress by Wirt Franklin and others. Fifty pages and covers make up the April number, containing a liberal volume of advertising.

Longer Service *on the Road;* Less Time *in the Shop*

---for tank cars painted this way



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There is additional information of much value about this special finish for all those interested in the more economical operation of tank cars. "Du Pont Technical Bulletin No. 5" will bring it to you. This bulletin will be sent free to you if you address E. I. du Pont de Nemours & Co., Inc., Dept. P. N. 4, Petroleum Sales Division, at any of these addresses — Public Ledger Building, Philadelphia, Pa.; 2100 Elston Ave., Chicago, Ill.; 351 California Street, San Francisco, Cal.

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No. 55

TANK CAR BLACK

Wilshire Group Obtains New Writ Against Gas Law Enforcement

By Jack N. Westsmith
N. P. N. STAFF WRITER

LOS ANGELES, April 11

AFTER slightly more than two weeks of partial enforcement at Santa Fe Springs California's gas conservation law was threatened with at least temporary impairment during the past calendar week.

A group of independent oil companies, known as the Wilshire Group, was successful April 9, in obtaining from the District Court of Appeal an alternative writ of prohibition restraining Superior Judge Hazlett from enforcing the temporary injunction restraining operators at "the Springs" from producing in excess of 304 million cubic feet of gas per day.

The new writ preventing enforcement of the restraining order is returnable April 21. In asking for this writ attorneys for the Commodore Petroleum Co., Ambassador Petroleum Co., Bandini Petroleum Co., Wilshire Oil Co. and Wilshire Annex Oil Co. argued that portions of the State gas law are unconstitutional and that curtailment according to the existing injunction will endanger successful operation of the wells.

According to these attorneys, present curtailment measures at Santa Fe Springs are resulting in a loss of $12,500 per day to the five companies. In substantiating this figure it was stated that production from leases controlled by the Wilshire Group had been reduced from 62,017,000 cubic feet of natural gas and 19,416 barrels of oil to 33,546,000 cubic feet of gas and 11,688 barrels of oil per day, a reduction of 7,728 barrels of oil per day which at $1.60 per barrel would give the estimated loss.

Wilshire Pleads Mechanical Difficulties

In defending their action these interests state they were, through mechanical difficulties, unable to comply with the restraining order and so, threatened with contempt proceedings, the writ of prohibition was asked for as the only speedy and adequate remedy.

It is further declared in the complaint that the state has not filed a bond to guarantee any losses due to temporary curtailment of production under the restraining order and that in the event the law was later declared untenable the defendant companies would be unable to collect damages.

So as not to overlook a bet Wilshire legal counsel attacked the constitutionality of the law on grounds that it deprives defendant oil companies of property without proceedings in eminent domain and without compensation.

The Wilshire Group's antagonistic attitude toward enforcement of the temporary injunction is thought to be due in a small measure to a loss sustained in its Off No. 18 on the Bandini lease which blew out and caught fire after having been shut in early last week.

Supervisor Blames Company For Blow-Out

Following an investigation of the blow-out on this well, R. D. Bush, Oil and Gas Supervisor laid the responsibility at the door of officials of the company because they had failed to equip the well with high pressure control fittings before attempting to "bean" the gas production.

During the investigation it was reported frost had been noticed on the cap of the control head prior to its failure, indicating that refrigeration was being caused by a leak of gas under high pressure. It was also pointed out that gas pressures in excess of 1275 pounds per square inch, the last pressure observed at the Off No. 18, have been maintained and successfully controlled by other companies in the field.

Following the investigation it was recommended that operators with inadequate surface equipment should kill the project and install heavy duty fittings before attempting to curtail natural gas production.

Other defendant oil companies for the most part continued to hold their gas output as near as possible to the allowable as provided for in the injunction. One large independent operator expressed the opinion that Wilshire's action automatically released other companies from adhering to the exact wording of the orders that provides for protection of the correlative rights of all parties to the restraining order. Other experts claimed the writ affected the restraining order only as it applied to the Wilshire Group.

Although the Wilshire interests indicated they would not open their wells as a result of obtaining the writ of prohibition, production from the field showed an increase of 2300 barrels within 24 hours after the writ was made effective. Curtailing operations are at a standstill with daily gas production within 24 million cubic feet of the allowable of 304 million and it is the opinion of many operators in the field that the Superior Court will modify its restraining order so as to allow the present production to continue.

If such a modification were made, to permit approximately 125 million cubic feet of gas to be blown into the air daily, it is thought likely a majority of the operators would cooperate with the state in its attempt to prevent waste of natural gas in other fields.

Hardships and oppressive effects of actual operation of the gas law at Santa Fe Springs has caused a very antagonistic attitude toward the statute by operators in these other fields.

This was clearly evidenced during the past week when the hearings, on order to show cause why operators in the Long Beach field should not be restrained from wasting gas, was opened at Long Beach.

Although this hearing was originally scheduled for the Los Angeles Superior Court under Judge Hazlett, the venue was changed to Long Beach under Superior Judge Crawford on a plea made by operators that it would be much more convenient for them. Another angle to this change of judges cannot help but take into account the unfavorable ruling made in the Santa Fe Springs case.

State Meets Reverses in Long Beach Case

The State through its legal counsel James S. Bennett, received several reverses during the two days, April 9 and 10, that the hearing was in progress at Long Beach. At one point in the hearing the court asked if it was Mr. Bennett's purpose to turn the court into a legislative body. This is taken by experts to mean that the Long Beach court will not look with favor on any scheme calling for continual supervision and adjustment of inequities such as has been present at Santa Fe Springs.

Long Beach and its main component Signal Hill presents a far

different picture and problem from that offered at "the Springs" due to the fact that Signal Hill with its 900 wells has settled down to steady production and with comparative low oil to gas ratios and high gas sales it is in a position to bring its natural gas wastage within reasonable limits without aid from the state.

Court May Modify Order In Santa Fe Springs

By Telegraph

LOS ANGELES, April 14.—Modification of the gas law injunction in Santa Fe Springs was forecast at a hearing in the Superior Court today which arose as a result of the writ of prohibition obtained by the Wilshire group to halt enforcement of the injunction.

It was pointed out that unless action is modified so as to be less disastrous, many other operators will apply for writ of prohibition similar to that granted Wilshire or will appeal to higher court in either case removing such defendant companies from further jurisdiction of court.

An advisory committee of three experts appointed by the court to study inequities resulting from enforcement of temporary injunction at Santa Fe Springs suggested at continuance of hearing that since restraining orders had been entirely suspended as to Wilshire companies and to three other small companies through appeal to higher court such orders are now inequitable to other operators in field and that it would be impossible to formulate recommendations for equitable order and therefore recommended to court existing restraining orders be suspended and no others issued pending decision on writ of prohibition.

Joseph Jensen, Associated Oil Co., secretary of the committee, stated that existing injunction could be modified at a future date so as not to work injustice to operators owning high gas oil ratio wells by changing method of gas allotment for field under injunction and to take into account position of project on structure and producing zone.

The court indicated it would favor modifying present order so that operators offsetting Wilshire should not suffer by obeying letter of law, but not that it would be suspended.

By Telegraph

LOS ANGELES, April 15.—Barnsdall-Rio Grande combination's Elwood Tideland well 88-2 completed late in the week for an initial production of 3000 barrels from 3490 feet had increased its flow by April 13 to 9600 barrels, making a new record for field and is the largest producer in the state.

Kern County Wildcat Looks Like Important Discovery

LOS ANGELES, April 11

ATTENTION of the California industry was directed away from contemplation of production decline curves in various fields throughout the state to a more favorable picture presented by a proposed test of an important wildcat well in Central California.

This well is being drilled by Belridge Oil Co. in Sec. 26-27-20, Kern county to test out approximately 153 feet of sand uncovered between 4950 feet, where 6 5/8-inch casing was set, and the bottom of the hole at 5086 feet.

The Belridge wildcat, according to field reports, has a striking resemblance to an important find as it is thought the hole is bottomed in the highly productive Temblor formation responsible for the productiveness of several San Joaquin Valley fields including Kettleman Hills.

Because of the highly favorable showings, which included a strong gas pressure, Belridge officials removed the light wooden rig and drilling equipment replacing it with heavy duty steel rig, Christmas tree and gas traps. A production test is due the early part of next week and should have definitely proved to the satisfaction of all whether or not this area may be considered an important factor in future production.

More positive than this possible strike in "the Valley," is Pacific Western Oil Co.'s recompletion at Elwood reported last week to have reached a daily output of 7500 barrels and which since that time has increased its flow to 8060 barrels.

This well drilled in the tidelands, offshore from the main field, to a depth of 3608 feet proved to be the largest producer in the history of Elwood and at its peak was producing more than any other single well in the state. Following a five day open flow test the well was cut back 43 per cent of its average potential in accordance with provisions of the state-wide curtailment program.

Pacific Western now has four producing wells, three of which are on tideland permits, in the Elwood field with a total production of approximately 15,000 barrels or nearly one-third of the field's total output.

In contrast to this gusher, operators in other parts of the state are either killing wells to comply with a restraining order issued against the Santa Fe Springs field to prevent waste of gas or are preparing to defend their rights against the enforcement of a similar order for their particular field.

In addition to the attention being given operative effects of the gas law operators at Santa Fe Springs have been turning back to logs of wells long ago abandoned or plugged in the shallow Meyer, Foix and Bell sands. Out of approximately 205 wells estimated to be capable of producing in the Meyer zone there are nearly 90 projects actually producing, 40 of which have been cleaned out and recompleted since March 21—the effective date of temporary restraining order.

Several wells drilled by over ambitious operators on the flank of the structure having the lower Clarke or Hathaway sands as objectives have now been plugged back to the Meyer sand due to edge water encountered in the deeper sands.

California's newest petroleum field, or what have you, located in Los Angeles county, southeast of Venice threatens to be, on a somewhat smaller scale, a repetition of the frantic search for the "liquid gold" made during the summer months of 1929 at Lawndale.

There may be two redeeming features to the present drilling campaign at Playa del Rey, the oil is not as high a gravity as that found at Lawndale and it is reported to have a considerable amount of sulphur.

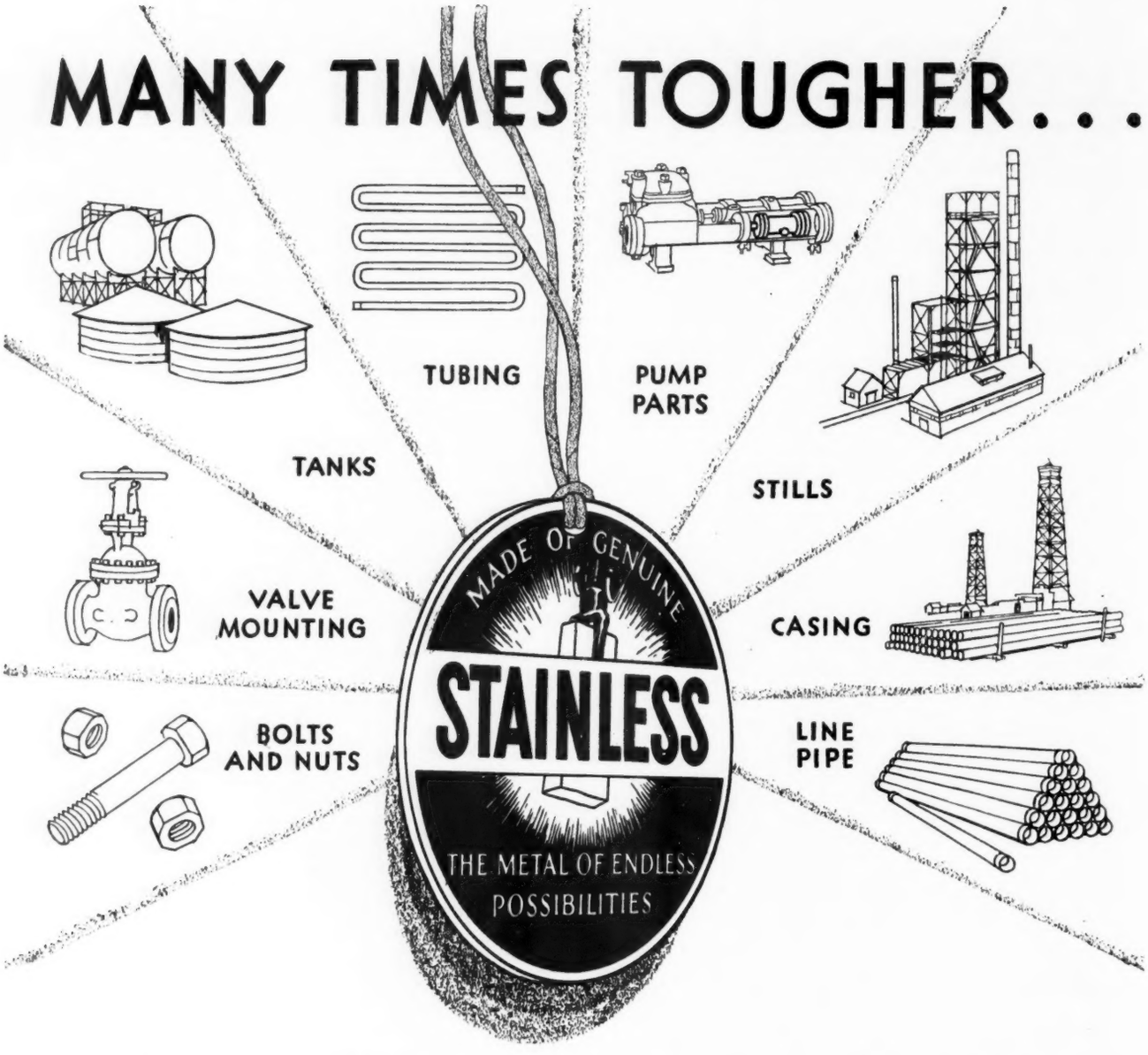
Notwithstanding these defects the close of the past calendar week showed a total of 14 rigs up, eight foundations laid, and two wells within easy distance of the pay sand.

Ohio Oil Co., which discovered the field in its Recreation Gun Club No. 1 at 6199 feet has seven projects under way in the area. Its Gun Club No. 2 is drilling at 6021 feet and its Howland No. 1, due east of the discovery is down to 6111 feet. Although the former project of this pair has picked up satisfactory showings in the core barrel the Howland well nearly as deep as the discovery has failed to find the oil sand.

The showings of these wells is taken by several operators as an indication that the structure at Playa del Rey will prove to be narrow and of small magnitude. Ohio has three other wells below 3800 feet and Union is pushing the drill in its outpost well located southeast of Ohio's holdings.

As if to throw cold water on the expectations of operators in these active districts, Umpire H. P. Grimm announced April 10 that crude oil production from the 31 fields under his supervision with a total potential production of 763,849 barrels, had been reduced from an allowable of 409,932 to an actual of 396,959 barrels.

MANY TIMES TOUGHER...



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** *National Petroleum News--June 10, 1925.*

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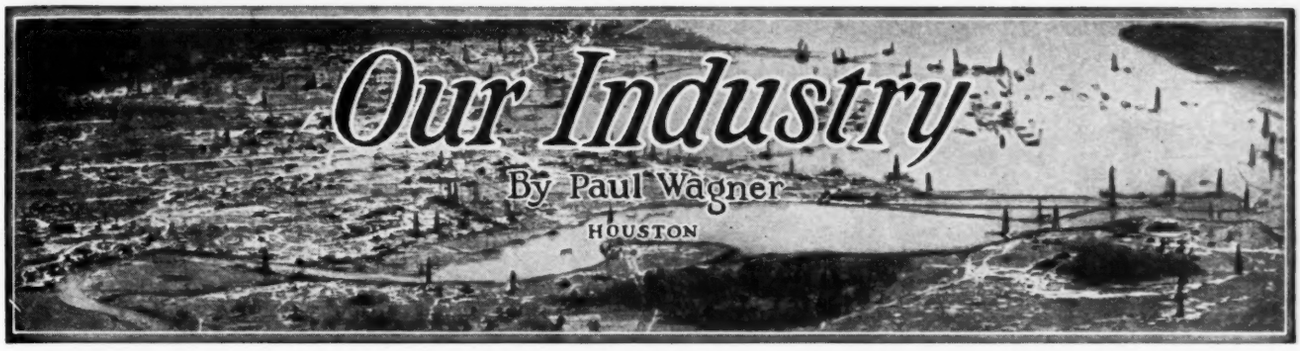


CHARLES ROESER, principal in the producing firm of Roeser & Pendleton, Inc., with Fort Worth headquarters, dates his oil industry affiliation back to the early days of Mid-Continent development, including Cushing district operations of 1914-1915. Mr. Roeser and his partner, "Tol" Pendleton, made their first big success in Texas in the days of Breckenridge development, where they operated extensive natural gas gasoline plant properties. Later, in Shackleford county, they made one of the big strikes of recent years in the development of the Cook ranch field.

* * *

D. S. Perry, who formerly made headquarters at Bloomington, Ill., for the Texas-Empire Pipeline Co., has been transferred to Boonville, Mo., in charge of construction work at Lowry City, Pisgah and Center stations.

* * *

H. S. Kaplan, formerly in the executive department of the Mexican Gulf Oil Co., at Tampico, has been transferred to the Houston land department of the affiliated Gulf Production Co.

* * *

T. H. Brown has been promoted to district foreman of The Texas Pipe Line Co., in the Mexia district of Texas, succeeding A. D. Riley, transferred to Dallas.

* * *

John L. Lamkin, individual operator with offices in the W. T. Waggoner building at Fort Worth, has returned home after a trip to Houston and Huntsville. Mr. Lamkin buried a brother at Huntsville, Feb. 23.

* * *

D. N. Harrell, formerly at Cisco, Texas, nas been transferred to Carlsbad, where he will have charge of southeastern New Mexico operations of The Texas Co., in Lea county, as district superintendent. He is succeeded at Cisco by M. J. Heald, formerly of Carlsbad.

* * *

R. E. Donovan and W. M. Roberts, respectively attached to the safety department of the Standard Oil Co. of California and its Rocky Mountain-Texas subsidiary, the California Co., have returned to San Francisco headquarters after a trip through Texas territory.

Bradford Hearn, formerly of Shreveport, is now connected with the land department of the Shell Petroleum Corp., at central division headquarters, Dallas. He was formerly secretary-treasurer of the Sparco Gasoline Co., Inc., and assistant sales manager of the Shreveport-El Dorado Pipeline Co., which operates a refinery in the Shreveport territory.

* * *

Joint warehousing facilities operated in West Texas by the Shell Petroleum Corp., and The Texas Co., have ceased to function in a consolidated sense, each interest now maintaining its own properties in the general territory. The consolidated warehouse plan was a hangover from the time when The Texas Co., acquired by purchase about two years ago the producing properties then operated in the Permian salt basin region by the Landreth Production Co.

* * *

Major Frederick R. Burnham, president of the Burnham Exploration Co., Los Angeles, which owns a 30 per cent net interest in the Domingeuz oil field of California, recently returned from an eight months trip to Australia and South Africa. Most of his time was spent traveling northward from Cape Town through the Bulawayo region, where as chief of scouts under Lord Roberts, the major was an outstanding figure in the Boer war. Parenthetically, his Boer war exploits were only a part of the major's contribution to the building of the Great South African Empire under the late Cecil Rhodes. The major was accompanied on his trip by Mrs. Burnham, their son, Roderick, and the wife and daughter of Roderick.

Charles Roeser

* * *

Robert B. Moran, consulting geologist of Los Angeles, is expected soon to return from the west coast of South America, where he has been engaged in working Ecuadorian and Peruvian territory. He was accompanied by his son Robert.

* * *

Carl M. Smith, formerly of the Skelly Oil Co.'s organization at Russell, Kansas, is now located at Amarillo, Texas. Ronald R. Ransom, formerly Panhandle district scout at Amarillo, has been transferred to Shawnee, Okla., succeeding H. D. Henderson, resigned.

* * *

Hunter S. Marston, newly elected president of the Bancamerica-Blair Corp., one of the largest security houses in the country, was oil industry vice president of Blair & Co., New York investment house, before its consolidation some months ago with what was then known as the Bank of America interests. Mr. Marston is a son of Edgar L. Marston, retired, who for years was one of the heads of Blair & Co. He is also a grandson of Col. Robert D. Hunter, one of the founders of the Texas Pacific Coal & Oil Co., of which his brother, Edgar J. Marston of Fort Worth, is now president.

* * *

Paul R. Deputy, formerly of the Los Angeles lands and leases division of The Texas Co. of California, has been transferred to the Bakersfield geological office in the San Joaquin Valley region.

Three additional oil offices have been opened in the Milan building at San Antonio. Lion Oil & Refining Co., of El Dorado, Ark., has moved its southwest Texas district offices to No. 919, in charge of John O. Gibson. The Texas Co. has opened scouting offices at No. 1637 with W. T. Short in charge. Offices of J. E. Redburn, individual operator, are in No. 618.

Charles L. Morgan and L. D. Ladd

E. H. Eddleman, receiver for the American Refining Properties, Wichita Falls, has taken an active part recently in efforts of Texas operating interests to work out conservation measures for the adjustment of the crude oil producing situation. In addition to serving on the steering committee of the Mid-Continent Oil & Gas Association's Texas division, which unsuccessfully sought legislation looking toward extension of cooperative development, he has been active in Wichita Falls district work. Mr. Eddleman, who is familiarly known to his friends as "Cap," is also active in the Western Petroleum Refiners' Association.

* * *

C. F. Kolp, manager of the Waggoner Refining Co., Electra, has charge also of the new 30-mile pipeline recently constructed from the W. T. Waggoner ranch in Wilbarger county, Texas, to the Wichita Falls refinery district. The six-inch pipeline, which has daily capacity of 15,000 barrels of crude, is now serving six Independent plants in the district. Included are the Taxman, Orient, Falls, Dale and Iowa Park refineries. According to R. L. More, manager of the Waggoner estate, the pipeline and auxiliary equipment was constructed at a cost of approximately $150,000.

* * *

After 11 years of service with the Oil Well Supply Co., E. E. Tyer has been transferred from Shreveport to Houston territory in charge of seven equipment stores. Mr. Tyer is widely known in southwestern territory.

* * *

George W. Pirtle, of the geological firm of Hudnall & Pirtle, Coleman, Texas, is spending a considerable part of his time now at Muskegon, Mich.

* * *

Charles L. Morgan, Fort Worth oil lawyer, representing individual small producers, occupies the three-fold position of vice president, secretary and treasurer of the Independent Petroleum Association of Texas. Lou D. Ladd, shown with him in an accompanying group picture, is also a vice president of the association. Mr. Ladd has been an independent producer in North Texas since Ranger days and previously was identified with the petroleum industry in Oklahoma. Both are widely known.

* * *

K. D. Pardee, district superintendent of The Texas Production Co., has closed the offices formerly maintained at Conrad, Montana, and opened others at Billings. The Billings district hereafter will include the state of Montana and that part of the old Casper district in northern and central Wyoming. The western part of Wyoming, including the LaBarge field, is being consolidated with the Colorado district under supervision of C. P. Nicklos, with headquarters at Craig, Colo. The Casper office is being discontinued. R. B. Leggett, formerly at Casper, has been transferred to South Texas territory of The Texas Co.

R. B. Siler

* * *

R. J. Riggs and W. L. Day are in charge of San Antonio district offices recently opened by Delmar Oil Co. through which subsidiary the Indian Territory Illuminating Oil Co. operates in Texas.

* * *

William A. Watkins is now field superintendent for the Standard Oil Co. of New Jersey in the Plaza Huincal district of Argentina, South America. He formerly acted in the capacity of a geologist.

* * *

L. S. Cox is now general production manager of the Italo Petroleum Corp., at Los Angeles. He recently resigned from the field organization of the Richfield Oil Co., of California.

* * *

Reno capital headed by H. F. Holmshaw as president of the Nevada-Mexican Holding Co., will make a test for oil on the San Antonio ranch, 65 miles below Ensenada, in Lower California. The lease concession covers approximately 4500 acres and the test will be drilled within four miles of a 4200-foot failure drilled several years ago by Vancouver capital. Besides Mr. Holmshaw, the Nevada-Mexican Holding Co. includes L. V. Stanton as secretary and H. E. Saviers as treasurer. John Etchebarren and Charles Meyer are directors.

* * *

Jerry B. Newby, geologist on the staff of the Buttram-Petroleum Corp., Oklahoma City, has been working recently in East Texas territory.

Paul Williams, formerly of Tulsa, has succeeded R. W. Fulweiler, as district chief of production engineering for the Pure Oil Co., in the Gulf Coastal territory at Houston. Mr. Fulweiler was transferred to Fort Worth under the Texas division chief, R. B. Kelly.

* * *

Burton Hartley, representing the Venezuelan-Mexican Oil Co., has taken up offices in the Smith-Young tower at San Antonio. He was formerly located at Cisco, Texas, in the general Ranger territory.

* * *

R. B. Siler, civil engineer attached to the land department of the Shell Petroleum Corp., in Gulf Coastal territory, makes his headquarters in Houston. An accompanying picture of Mr. Siler was taken at an engineering group meeting in Galveston last year.

Efficient Heaters for Treating Oil Eliminate Boilers on Lease

By William F. Lowe
N. P. N. STAFF WRITER

TULSA, April 10

THE installation of small water heaters to replace boilers in the treating of oil results in savings of major importance on a small property. Not only will this method of handling cut oil reduce the overhead and prolong the profitable life of the lease, but it also reduces the investment.

Heaters of various kinds are no novelty to the industry though the number that can be used to the exclusion of a boiler are comparatively rare. Several such water heaters have been in operation on leases of the Continental Oil Co., in Oklahoma and have proven practical and economical, particularly during the cold period just passed.

In the Country Club district of Tulsa on the W. F. Mackey lease, 28-20-12E, Osage county, the first of the heaters was installed late last year. So successful was the original that two more of the same type were set up on the same lease. E. C. Templeton, district foreman, had the first one made according to his own ideas though the design was later changed to meet different conditions on another lease. Both types are illustrated herewith.

There are 29 wells on the Mackey lease having a daily average production per well of from four and one half to five barrels per day. All are pumped by central powers through 2-inch tubing and all make water. The percentage of the latter varies in the different wells though the average for the lease is close to 60 per cent. So much water on a property where the yield is so small, becomes a serious problem and has often resulted in the premature plugging of wells. There are any number of cases in the country where such leases have been abandoned as no longer profitable.

On many of the leases so abandoned, it is quite probable that treating costs comprised a very large part of the overhead. Operators felt it impractical to continue the expensive process of treating the fluid delivered from the wells in order to obtain so little oil. By the use of water heaters which reduce the amount of compound necessary to treat the oil, the profitable life of small properties may be materially lengthened.

The first heater designed is shown in Fig. 1. Three of these are in operation on the Mackey lease, one for each battery of stock tanks, and each is connected to a 250-barrel treating tank. The principle upon which they work is that of a thermo-siphon which is the same as the cooling system of the old model "T" Ford. As the temperature of the water in the heater is raised, expansion of the liquid takes place and it moves upward and through the overhead pass to the treating tank. At the same time, the cooled water is drawn in at the bottom from the same tank. The process is continuous and its speed is dependent upon the amount of heat applied.

Structurally the heaters are composed of two, eight foot lengths of 8-inch junk casing with a welded 8 by 8-inch nipple connecting them. Welded on the four ends are plates having 4-inch openings through which are run and welded 9-foot lengths of 4-inch pipe. This pipe may be seen entering the lower half of the heater on the left of Fig. 1 and coming out on the right to make a reverse turn, enter the upper half and terminate in the chimney seen on the left. It corresponds to the heating coil of the common domestic water heater. The gas connection and burner are at the lower end and the heated exhaust gases pass through its entire length.

The casing and the exposed turn of the 4-inch pipe are insulated with asbestos cement and sheet asbestos, over which is wrapped tarred roofing paper. The same is true of the 2-inch water lines to and from the treating tank, the covering being held in place by insulating bands.

J. C. Johnston, district superintendent for the Continental Oil Co., in the Tulsa area and E. C. Templeton, district foreman, whose heaters are discussed herewith

It will be noted that the 250-barrel treating tank in the background is set above the heater. To make this possible, higher ground should be taken advantage of wherever it is available, in order to avoid the expense of building a grade upon which to set the tank. It is necessary for it to be above the heater if the system is to function properly, for the latter operates at its greatest efficiency when the intake and outlet lines are approximately horizontal. The exact height to which the tank

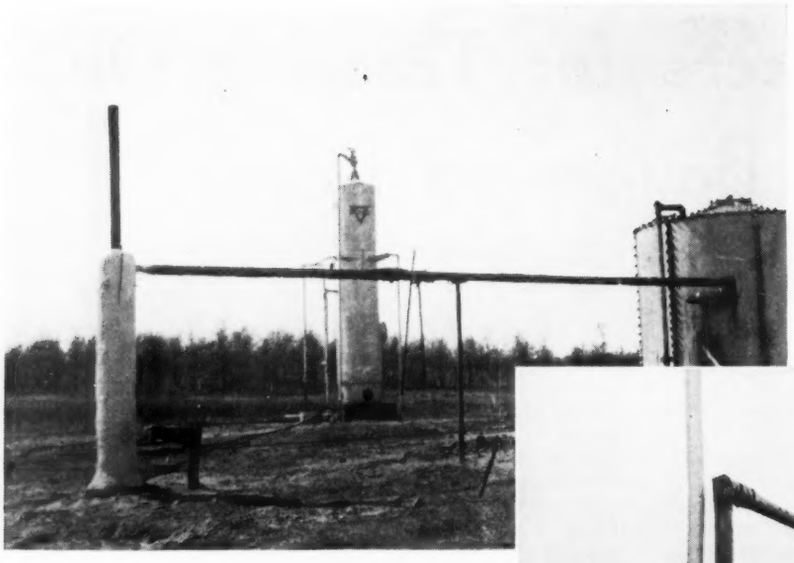


Fig. 2—Perpendicular heater on the left with treating tank on right. The arrangement here is a little different from that shown in Fig. 1, though the process is identical

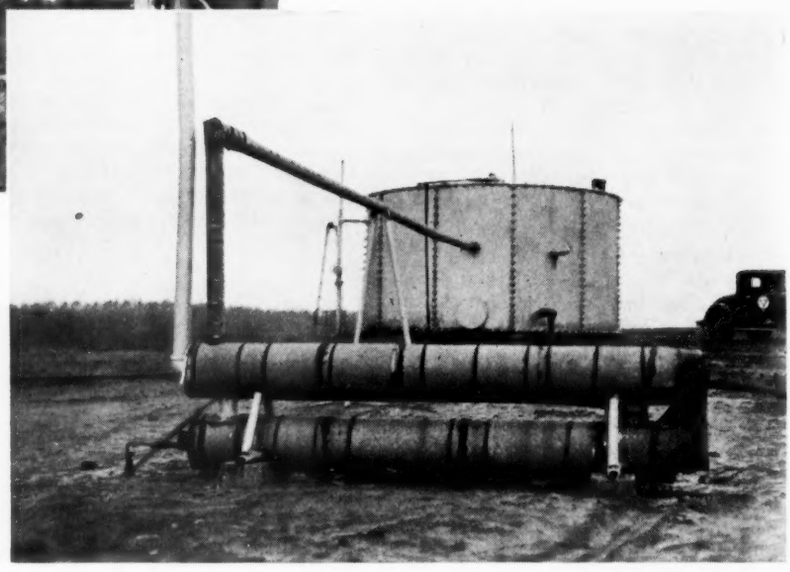


Fig. 1—Horizontal water heater on lease of the Continental Oil Co., near Tulsa, Okla., showing its connection to the treating tank

must be raised is determined by the amount of oil that it is to handle.

In the case under discussion, about five feet of water is kept in the treating tank at all times. This is indicated by the height at which the outlet line of the heater enters the tank. Above the water level is a space of about two and one half feet, most of which can be occupied by oil, though in this particular instance the oil gravity line to the stock tanks taps in one foot from the top. The latter is shown on the left of the tank with the derrick as a background.

Below the manhole plate, the water drain to the heater may be seen coming out of the bottom of the tank. Water is drawn through this line into the lower section of the heater where it comes in contact with the hot 4-inch pipe. As it is heated, it passes up through the 8-inch connecting nipple, shown behind the right brace, to the upper section and back to the treating tank through the high line. An average temperature of 100 degrees is maintained with very little difficulty though the amount of water handled is in excess of 150 barrels.

The fluid coming from the wells is first treated by the introduction into the flow lines of small amounts of treating compound, the latter being injected automatically by very small pumps. The fluid then passes to the central receiving tank or separator which serves each treating tank and in which much of the water is settled out. Above this water, the fluid yet to be treated and still containing a fair percentage of compound, is skimmed off at the top. It passes through a line which, as shown in Fig. 1, enters the treating tank below and to the right of the hot water line from the heater.

Here it is forced to rise through the heated water to reach the oil level some four feet above. Since much of the compound is carried over from the separator, the water of the treating tank soon becomes impregnated with it and is doubly effective in separating the water from the oil. B. S. may be bled off at the high water level and the oil which gravities off to the stock tanks is all pipe line oil.

Water levels in both the treating tank and the separator must be watched carefully in order that they may not rise too high. Overflows are expensive so both are bled occasionally and kept at the desired level.

In Fig. 2, the installation of the Continental Oil Co., on its Sewell lease, 34-15-10E, Creek County, is shown. Here the heater is an upright and is composed of one 8-foot outer shell of 10-inch casing with a 4-inch heating tube having a damper near the top. Being smaller than the heater on the Mackey lease, this outfit handles about half the amount of water, though this is due more to the size of the treating tank, which is but a 100-barrel container, than to the capacity of the heater. The process, however, is identical.

According to J. C. Johnston, district superintendent in the Tulsa area for the Continental, the upright heater is just as effective as the horizontal double unit. It is considerably easier to build as it requires less welding and cutting, less insulation and fewer fittings. It can be set up on an old band wheel flange.

The principal benefits of such heaters as listed by Mr. Johnston are as follows. Elimination of boilers which results in the reduction of investment on the lease; saving of fuel gas, tools, fittings and boiler house upkeep; doing away with the draining of water lines in winter and fluctuation of water temperatures in the treating tank. Most important of all, it gives the pumper more time for keeping the lease in good condition and allows one man to care for more wells.

There is also a definite saving in the amount of treating compound used for it is forced to do double duty and is so regulated that smaller quantities answer the purpose. There are no steam coils in any of the tanks and the number of tank cleaning jobs is reduced to a minimum.

All of these things, with their attendent expense, have represented the difference between a profit and a loss on many another lease. The cost of the change from the older methods to the one outlined is very small compared to the value of the return. It can be done on most any lease and though there is nothing spectacular about the production figures of such properties, they can be kept on velvet by these corner cuts on economy of operation.

"about drillin' says I"....

SEEMS that we have to go deeper and deeper these days to reach the old pay sand. Time was when light rigs, small engines and lap welded pipe did the trick but now it's a horse of a different color.

These deep wells require not only heavier equipment but real honest to goodness seamless casing to stand the gaff. And believe me, those Spang people sure have the goods for any well.

Why, as far back as I can remember, their casing and drill pipe have always been equal to the toughest job. Seems that they keep developin' new stronger pipe for new drilling conditions all the while.

In fact if it hadn't been for that new alloy steel *Simancro A. P. I. Seamless Casing they have developed, we couldn't have finished that last 6700 foot hole to the pay sand. That's why I say they have *the* pipe for sure-shot results."

*Simancro is a special mill tested alloy steel seamless casing that can be set 40 per cent deeper than the regular Seamless Casing. It is available in 95000 lb. and 110,000 lb. minimum tensile grades.

SPANG, CHALFANT & CO., INC.

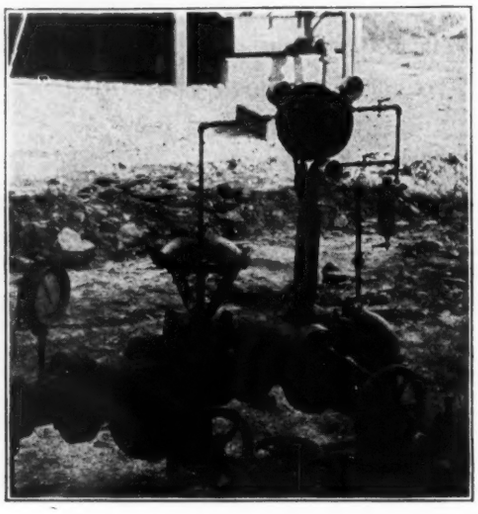
General Offices: CLARK BUILDING, PITTSBURGH, PA.

Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST LOUIS, MO. PITTSBURGH, PA. TULSA, OKLA. LOS ANGELES, CAL.
Welded Mills: ETNA, PENNA. SHARPSBURG, PENNA. *Seamless Mills:* AMBRIDGE, PENNA.

SINCE 1828

Tycos Back Pressure Regulator

(Pilot Operated)



THE Tycos Back Pressure Regulator successfully meets the demand for an instrument capable of giving close and consistent back pressure regulation, which the present highly developed and scientific practices of natural gasoline manufacturers demand.

It will maintain constant back pressures on gasoline plant absorbers, accumulator tanks, fractionators or stabilizers, surge tanks, stock vent tanks, re-run stills, residue gas lines, etc. Also on pressure distillate receivers, or gas separators of refinery cracking units.

Close regulation is assured by the high sensitivity of the regulator response and the throttling action of the control valve. With tendency toward the slightest pressure change in the process under control, the valve in the gas discharge line immediately throttles to such a position as is necessary to release the required amount of gas to give a consistently smooth and constant back pressure, as is evidenced in the even line on the recording pressure gauge chart.

Additional information on this installation furnished on request.

Taylor Instrument Companies
ROCHESTER, N. Y., U. S. A.
CANADIAN PLANT, TYCOS BUILDING, TORONTO
MANUFACTURING DISTRIBUTORS IN GREAT BRITAIN
SHORT & MASON, LTD., LONDON

Tycos Temperature Instruments
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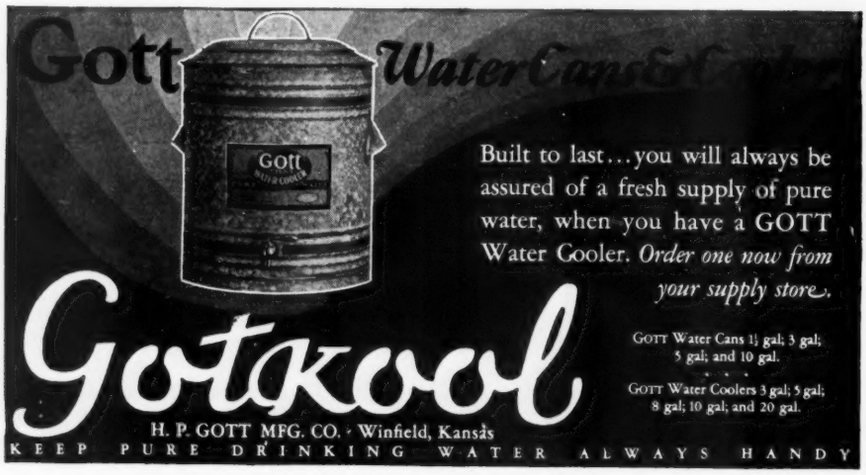
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Gott
Built to last...you will always be assured of a fresh supply of pure water, when you have a GOTT Water Cooler. *Order one now from your supply store.*
Gotkool
GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.
GOTT Water Coolers 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.
H. P. GOTT MFG. CO. · Winfield, Kansas
KEEP PURE DRINKING WATER ALWAYS HANDY

Outlines Method to Form Production Chapters

MIDLAND, Texas, April 10.—Local chapters in the A.P.I. division of production may be formed by announcing the organization, date and place, preferably by the vice-chairman of the district, so J. R. McWilliams, Skelly Oil Co. and head of the Oklahoma-Kansas organization, said at the Southwestern district meeting of the A.P.I. division of production here.

The meeting should be called, he said, by the chairman or vice-chairman of the division, and it would be advantageous to have some one present who could explain the benefits of field meetings. It is desirable to have a committee composed of heads of production departments of several companies to help in organizing since these heads are interested in discussing the meetings with their men.

Officers of the chapter, as outlined by Mr. McWilliams, are a chairman, vice-chairman, and secretary-treasurer. A chapter committee is advisable for working up chapter activities and in supporting the meetings.

In financing a chapter he said some Mid-Continent organizations had a membership fee of $1 annually, for the local chapter only. This money is spent upon recommendation of the chapter committee. Other methods of raising the funds to cover expenses are subscriptions, donations, and registration fees. The Institute rules that no funds are to be derived through the sale of advertising or of space for exhibition of equipment.

Mr. McWilliams reported that local chapters have achieved fine results.

Safety In Storage Tanks Told

CHICAGO, April 11.—A revision of the safe practices pamphlet on storage tanks for oils, acids and dry materials, telling of experiences in accident prevention rather than of requirements of federal state or insurance regulations, has been published by the National Safety Council, Civic Opera Bldg., Chicago, according to T. A. Burke, director of publicity.

The pamphlet discusses the hazards of the storage of liquids and dry materials not under pressure, and tells what kinds and sizes of tanks to use for oil storage to do away with all possible accidents.

The above is published in safe practices pamphlet No. 63 and can be obtained by writing the safety council at the above address.

Germany was by far the largest shipper of greases to Finland during 1928. Its exports of this product totaled 644,250 pounds, compared with the United States exports, which ranked second with 87,270 pounds.

Instruments Measure Declination Of Drill-Hole, Dips of Strata

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON

DECLINATION - RECORDERS and other instruments calculated to help solve the crooked hole problems of the petroleum industry are now being offered operators in the southwest.

A strata-meter, which is included in the group, is described as positively defining the dips of underground formations, thereby eliminating the expense of unnecessary test drilling to establish data for future locations.

Included among the features represented in favor of the instruments is the fact that they will run inside a 4-inch drill stem. It is not necessary, according to Erwin Goldschmidt, of Dallas, sponsor for the instruments in the southwest, to interrupt operations greatly in using them.

Measurements can be made, according to Mr. Goldschmidt, in flowing wells, producing gas wells or water-filled holes, in either case in a short period of time.

In recent years it has been found that many deep oil wells are off vertical, with declinations in some instances extending up to 45 degrees. The length of the bore is often greater than the depth of the hole and frequently mechanical complications assume important scope.

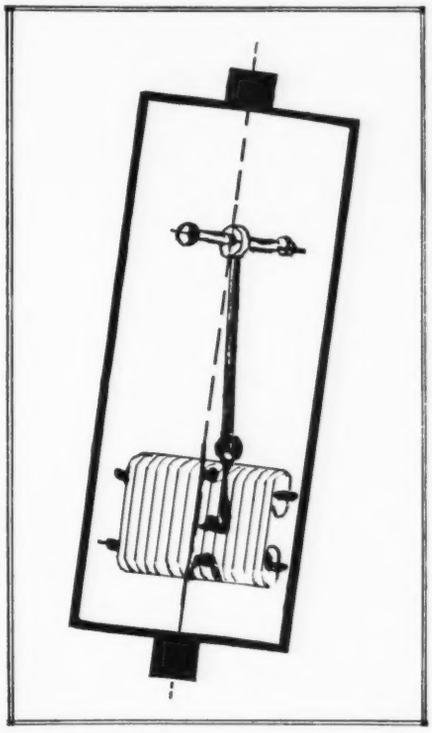
The bore-hole declination recorder of the Gesellschaft fuer nautische Instrumente, offered the industry through Mr. Goldschmidt, is described by him as intended not only to measure declinations in completed wells but also to find positions with regard to vertical at any time during the drilling process.

In describing use of the instrument, he says an apparatus held exactly in the direction of the bore-hole, by means of guide brushes, is lowered slowly into the hole on a cable. In the apparatus is a recorder box with two pendulums.

One of the pendulums always swings east-west; the other north-south. Swinging plans of the pendulums are maintained by a small gyro compass with spinning top, which makes 25,000 revolutions a minute. The direction of the gyro compass is transferred by electric contacts and a follow-up motor to the recorder box.

Under the pointed ends of the pendulums are recording charts, which by means of a registering mechanism impelled by a current from above chart the data desired. As the pendulums always hang vertically and the registration charts have the direction of the bore-hole, the declination is plainly marked.

Through what is described as a simple addition of the marked readings the total declination of the bore-hole is found in two components namely, north-south and east-west.



Arrangement of recorder box with east-west pendulum. The pendulum hangs vertically but the recorder box has the same direction as the boring. Illustration exaggerates inclination

Mr. Goldschmidt describes operation of the apparatus as follows:

"It is let down the bore-hole and a registration is taken for every four meters, namely, when letting it down as well as when drawing up the apparatus. If the registration charts are then taken out of the apparatus the total course of the bore-hole can be found in the easiest way by addition of the readings.

"If it is the desire to obtain vertical bore-holes it is well to make a measurement when a depth of 300 meters has been attained. Experience has shown that the first large declinations occur at about this depth. Of course, the depth to be chosen will depend on geological conditions and experience.

"Should a declination from vertical be found, even though small, this can be corrected by drilling for several hours, or shifts, with light pressure. Practice has shown that if declinations are small, the bore-hole then will return to vertical.

"It is possible, however, to introduce a wedge, according to various modes of proceeding, to which we hold the patent rights in Germany, and to lead the bore-hole back into the vertical line by continuing to bore past the wedge.

"After setting the wedge or after boring with small pressure, a second measurement must be taken in the lowest part of the hole to examine if actual return to vertical has been made. With attentive work this will be nearly always achieved; at the latest, however, after introduction of a second wedge.

"The boring is then continued until another stratum is reached where large deviations may be expected. The proceeding then may be repeated."

Mr. Goldschmidt says the apparatus has produced great savings in European countries, where he describes it as having been used for so many years that it can be no longer called an experiment. It has been used successfully, he says, where shafts of coal mines have to be sunk to great depths.

Submarine Line Takes Oil To Tankers

NEW YORK—A 70-mile pipe line recently completed by the Standard Oil Co. of California transports crude oil from Kettleman Hills to Estero Bay on the Pacific coast. This line is of 10-inch pipe and is entirely welded. It carries oil under an initial pressure of 1000 pounds per square inch to storage tanks on the coast.

As a deep water harbor is not available at this point, a 16-inch submarine pipe line has been built to carry the oil from the storage tanks to the tanker anchorage 3000 feet out at sea.

An interesting feature of this line is that it was entirely constructed on shore, a narrow gauge railroad extending 3000 feet inland in a straight line on a two per cent grade, having been constructed especially for this purpose.

for

• BAD SCALE CONDITIONS •

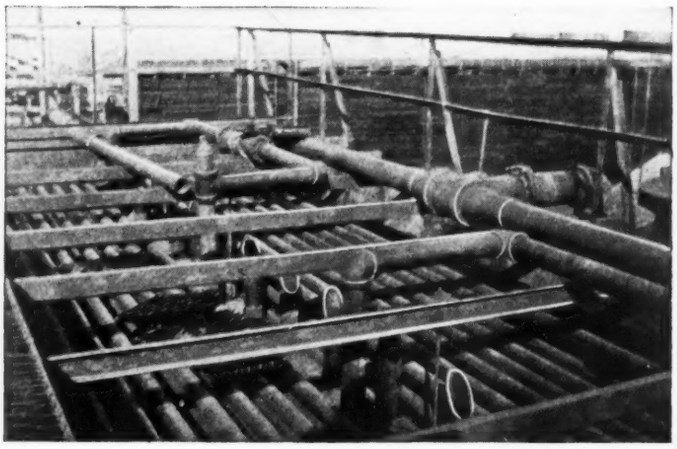
use

CONDENSER COILS

of

ARCO METAL

CAST IRON PIPE



seamless vertically cast

An Installation of

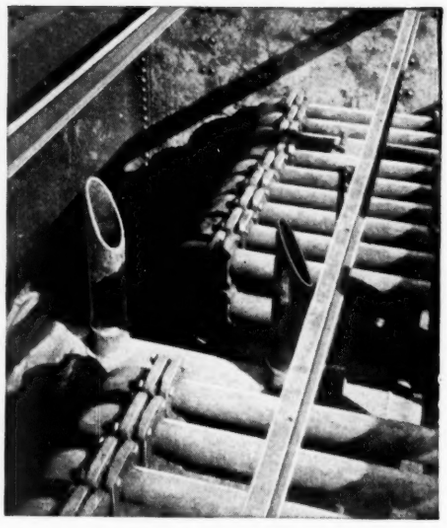
3" ARCO METAL PIPE

— in exact 32 foot lengths — with Arco Metal Return Bends.

This installation has 38,400 feet of pipe in four coils.

FOR those localities where extremely bad water is encountered — where other types of condensers foul too rapidly — use coils of ARCO METAL PIPE. It can be obtained in single pieces as long as your coil, its natural flexibility will tend to crack scale so most of it will fall off, while the rest can readily be cleaned off. Such coils will be efficient, easily cleaned and durable since ARCO METAL PIPE is cast from a corrosion-resisting nickel-chromium iron.

Let us discuss your problem with you — no obligation — write us.



Arco Metal Pipe is distributed to the oil industry by the National Supply Companies and Crane Co., and is carried in stock in the stores of the National Supply Co., in the cities shown below.

Augusta, Kans.
Beaumont, Tex.
Blackwell, Okla.
Borger, Texas
Charleston, W.Va.
Cushing, Okla.
Duncan, Okla.
Eldorado, Kans.

AMERICAN RADIATOR COMPANY

INDUSTRIAL DIVISION

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40 West 40th St. NEW YORK CITY
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1214 Quinby Building LOS ANGELES
4th and Townsend Sts. SAN FRANCISCO

Ft. Worth, Texas
Muskegon, Mich.
Newark, Texas
Okmulgee, Okla.
Shreveport, La.
Torrance, Calif.
Tulsa, Okla.
Toledo, Ohio

Plant at Springfield, Illinois

New Equipment

J. H. Williams & Co., Buffalo, N. Y., has put out a circular on its new chain pipe tongs which it calls Vulcan Boll-Weevil, designed mostly for oil field service. The new equipment was placed on the market in March.

* * *

Goulds Pumps, Inc., Seneca Falls, N. Y., has opened a stock warehouse at 213 East Archer St., Tulsa. The company's sales office, formerly at 705 Kennedy Bldg., has been moved to the new location in Tulsa, and R. T. Roberts has been put in charge as district manager.

Centrifugal pumps for refineries, power and industrial plants, will be carried in stock.

* * *

Oxweld Acetylene Co., 30 East 42nd St., New York, is selling a welding rod for making extremely strong welds in steel, which it designates as Oxweld No. 22 S. D. steel welding rod. This rod meets the demand for 100 per cent joints in steel pipe having a carbon content of 0.30 to 0.40 per cent which has recently come into use.

* * *

Crouse-Hinds Co., Syracuse, N. Y.. in Bulletin 2211 tells of the old and the new in gasoline service station lighting. Floodlighting to replace the outline lighting of stations by bare lamps is being adopted by many station operators. Two distinct types of floodlights are made by this company: one of the close type which has a mirrored glass reflector mounted in a dust-tight housing and a door with a diffusing lens and the other an open type with a matte finish reflecting surface and no cover glass.

* * *

A new portable fire extinguisher for oil producing properties has been placed on the market by the American-La France & Foamite Corp., Elmira, N. Y. Its rugged construction and wide roller bearing wheels permit easy pulling over rough going.

It is called the "Wideway" engine. Interior construction provides for metering of the two chemical solutions used so that about 300 gallons of Firefoam are produced which smothers the fire under an airtight blanket of foam. The stream of Firefoam is discharged at a range of 50 to 60 feet.

* * *

The Autocar Co., Ardmore, Pa., has recently sold 69 heavy-duty Autocar trucks to Russia, according to H. M. Coale, vice president of the Autocar Co. All cars required are powered with six-cylinder engines. These will be used for street construction and maintenance work in Moscow.

The Meriam Co., 1955 West 112th St., Cleveland, O., has placed on the market a gas well life tester for determining the probable life of gas wells. The estimate is based upon the periodic recording of the gradual decrease of flow with its corresponding drop in "rock pressure," the company says.

The instrument consists of a gauge for measuring the total of rock pressure of the well; a mercury-filled U-tube manometer for indicating the differential due to the building up of pressure and a line pressure reservoir of welded steel, together with suitable main and bypass valves.

* * *

Vapor Recovery Systems Co., Compton, Calif., has designed a new type of vent breather valve. It is a compact unit with static balanced pallettes. The body is stamped and fabricated from 18-gage Toncan iron and the valve is painted inside and out with G. E. Glyptal lacquer. The guiding apparatus is of special alloy aluminum. The manufacturers claim that greater vacuum capacity is permitted, due to the stream line design, and that the unit has a very low capillary attraction.

* * *

Chicago Bridge & Iron Works, Chicago, has published a booklet on stopping evaporation with the Wiggins breather roof. It gives detailed information on an oil storage tank roof which prevents evaporation by flexing up and down instead of venting vapor out of the tank.

Where corrosive oils have been encountered, tanks with Wiggins roofs have been filled so that the oil is in contact with the under side of the roof, which prevents corrosive action of the steel plates, the company says.

Data on gravity savings, and descriptions and sketches of all fittings and vents are included. (This new type of roof was described in detail in an article in NATIONAL PETROLEUM NEWS, Feb. 12, page 46.—Editor)

* * *

National Brake & Electric Co., Milwaukee, has off the press Circular 858 describing its new hydraulic car washer with automotive worm drive.

Its slow crankshaft speed of 90 r. p. m., its compact and sturdy construction and automatic lubrication assure smooth operation and long life, the company says.

The car washer is equipped with one gun having a capacity of four gallons of water per minute at 300 pounds pressure. All bearings, wrist pins, pistons and cylinder walls are automatically lubricated from the oil in the crank case. There are no oil or grease cups on this device. Neither are there external crankshafts, connecting rods, chains or noisy gears.

* * *

Gilbert & Barker Mfg. Co., Springfield, Mass., after seven years of testing and development work, has placed on the market what it calls its Silent Flame oil burner for home heating. This burner is of the pressure atomizing type adapted to use low price fuel oil and is equipped with a specially designed and patented combustion head by which the size and shape of the flame can be exactly fitted to the individual requirements of various sizes and types of heating plants.

This feature eliminates the necessity of building or carrying in stock three or four different sizes of burners, and also makes possible a broad flat flame of maximum heat radiation, which does not lose heat by touching the sides of the firebox.

* * *

The Youngstown Sheet & Tube Co., Youngstown, O. has published in a 61-page booklet "Youngstown Pipe" about everything the pipe user wants to know. It contains a brief non-technical description of manufacturing processes, some observations on the handling of tubular goods in the oil fields, and technical data on dimensions, weights, threads, etc. There is also theoretical information on the margins of safety at different depths for various forms of drill pipe, casing, tubing, etc.

* * *

The Lincoln Electric Co., P. O. Box 683, Cleveland, O., manufacturer of stable-arc welders and Linc-weld motors, has opened new offices at Saginaw, Mich., Fort Wayne. Ind., and Oil City, Pa., in charge of J. E. Luter, D. H. Carver and E. D. Anderson respectively.

* * *

The Autocar Co., Ardmore, Pa., which recently closed negotiations for the sale of 69 heavy duty trucks to the Amtorg Trading Co., New York, for export to Russia, reports the payment of its thirtieth consecutive dividend on its preferred stock. The company has completed the alteration of its Ardmore plant which involved expenditure of $170,000.

* * *

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has published an eight page leaflet describing the application, design and operation of motors and control used for rotary drilling. A feature of the leaflet is a curve which shows how all power requirements of rotary drilling are easily met by electric drive.

It includes illustrations of installations and photographs of construction details. Copies may be obtained by writing the company and asking for Leaflet 20444.

Modern Refining—Science and Practice

By Colonel George A Burrell*

Article 19

The Refinery Power Plant

Water tube boilers vs. horizontal return tubular boilers; Calculation of boiler efficiency; Treating boiler water; Steam waste in the refinery; The economy of a central power plant; Water cooling systems

THE fuel bill for stills and boilers is the largest single item of refinery cost. Under some conditions it may reach 40 per cent or more according to Delbridge[1]. His analysis of several years ago for a complete plant follows:

Fuel for stills and boilers	40 per cent
Process labor	20 per cent
Maintenance	15 per cent
Chemicals, clay, etc.	15 per cent
Sundry	10 per cent
	100 per cent

A modernized complete plant of today will use much less fuel than this, but the fuel will still remain a major item.

The main improvements of today in reducing the fuel bill of a refinery consist of a central power plant with process steam as a by-product, electrically driven units as far as possible, efficient tube stills, good columns so that rerunning practice is reduced, return of waste steam to the boiler, engine driven high pressure oil pumps for the cracking process, superheated steam for process work, high pressure water tube boilers, with all the accessories such as preheaters, water cooled walls; feed water heaters, proper treatment of boiler feed water, metering of steam lines, and use of control, and indicating instruments, etc.

H. R. T. Boilers

Horizontal return tubular boilers are much used but suffer by comparison with water tube ones. They are as efficient as the latter for operation at rated capacity and cost about 60 per cent as much per square foot, but are limited in size and pressure because of the rapid increase in plate thickness with increase in diameter, hence few of them operate over 150 pounds pressure. They have small overload capacity, the steam is usually wet and they are not very accessible for cleaning. They are now considered obsolete in plants of 200 boiler horsepower or more.

Water Tube Boilers

Water tube boilers can be operated at high pressures, are quicker steamers, have greater overload capacities, and are safer and more easy cleaned.

Boiler Efficiencies

A complete balance must be made of boiler operation for the best results in determining efficiencies, but for quick approximate results a simple method consists of:

(1) Analyzing stack gases.

(2) Determining water evaporation by metering the water going into the boilers over a 24-hour period.

(3) Making a 24-hour record of fuel consumption.

(4) Determining the B.t.u. content of the fuel.

The damper can be regulated so as to change the amount of air going into the furnace so that finally, as shown by stack gas analysis, satisfactory combustion is secured, i.e., high CO_2 content with no CO and little smoke.

Assume that two boilers, 100 horsepower each generate 5798 pounds of steam per hour or the equivalent of about 180 boiler horsepower. Further, that the fuel consumption is 600 pounds of coal per hour and that the coal has a heating value of 13,500 B.t.u. per pound. On this basis the efficiency of the boiler will be 74.7 per cent. This is computed as follows:

(a) One pound of steam at 75 pounds gauge pressure requires 1186.5 B.t.u. for its generation when the water is heated from 32 F.

(b) The feed water was admitted to the boilers at 175 F., hence it is necessary to reduce the above figure by 175—32 or 143 B.t.u. per pound. Therefore, the heat of generation for 1 pound steam in this particular case is 1043.3 B.t.u. per pound.

(c) 5798 (lbs. water per hour) x 1043.5=6,050,213, the B.t.u. required to generate steam per hour.

(d) 600 (lbs. coal per hour) x 13,500=8,100,000 B.t.u., the amount of heat put into the furnace in the form of coal.

(e) The boiler efficiency becomes

$$\frac{6{,}050{,}213}{8{,}100{,}000} = 74.7 \text{ per cent.}$$

A complete balance would consider:

(a) Sensible heat carried away by the hot dry flue gas.

(b) Heat loss due to unburned CO in flue gas.

(c) Heat required to evaporate and superheat moisture in the coal to the temperature of the flue gas.

(e) Heat required to superheat the water vapor in the air supplied for combustion to the temperature of the flue gas.

(f) Unavailable heat lost in the discharge of the water vapor formed from the combustion of the hydrogen of the coal at the temperature of the flue gas.

(g) Unclassified losses due to radiation. Unconsumed hydrogen and hydrocarbons, and unaccounted losses.

The rest of the heat is absorbed by the boiler.

Boiler Auxiliaries

Higher boiler efficiencies have resulted from high boiler pressures and

[1]Before Nat. Pet. Ass., Atlantic City, N. J., Sept., 1927.

*Consulting Chemical Engineer, Pittsburgh, Pa.

ADVERTISING PAGES REMOVED

temperatures combined with improved economizers and air preheaters and the development of air and water cooled walls, and greater use of radiant heat.

Economizers

Economizers heat the feed water with waste heat in the stack gas.

The Foster-Wheeler Corp.[2] finds that with an investment of $53,000 for economizers the net saving is 8.6 to 10.2 per cent of the coal bill. The boilers were the Stirling type of 11,959 square feet.

Air Heaters

Air heaters have long been used. Modern ones are of tubular type and reduce flue gas temperatures to as low temperatures as 250 to 300 F. Under such conditions the economizer is largely eliminated, of course. At these temperatures the stack draft is too low to produce the necessary boiler draft and induced draft fans are used.

At some plants combustion controllers are used to automatically regulate stack dampers in accordance with steam pressures. One power plant[3] reports that the monthly overall boiler efficiency increased from 71 to 74 per cent, due to this system of control.

Cooled Furnace Walls

Furnace walls are cooled by blowing air[4] along the walls inside the furnace or by cooling the outside wall with air or water. This keeps brick from collapsing or deteriorating. Refractories usually of kaolin base, soften under load at 2200 to 2900 F. With some boilers now operating at 400 or more per cent of their rating, very high furnace temperatures develop.

Superheaters

Superheaters are located in a boiler usually above the tube bank in a straight tube type of boiler, so as to give good control of the super heat. They are equipped with safety valves and are made of materials to stand severe usage. Sometimes the superheating is done in two stages and in series, in boilers of small combustion space. The radiant type of superheat is of modern development. Pressure drops through superheaters are of moment.

Soot Blowers

Soot blowers are common adjuncts of boilers. They blow soot from heating surfaces. Their use will depend upon the grade of coal used and the rate of coal consumption.

High Boiler Pressures

High pressure boilers are the order of the day in large power plants. The Boston Edison Co. generates steam at 1200 pounds and 1700 F. The steam supplies a 3150 K.W. turbine through which it is exhausted to 350 pounds pressure. Next it is superheated to 700 F. and is fed to a full condensing turbo-generator. Eighty-one per cent of the power is taken from the low pressure generator and 19 per cent from the first one. A 1200 pound plant will show about 13 per cent saving over a 400-pound one. Swain[5] finds that the operating costs are the same.

Other boilers operate up to 1800 pounds. The upper theoretical temperature and pressure are 740 F. without superheat, and 3200 pounds. These are the critical data of steam. Boilers in industrial plants usually do not exceed 500 pounds pressure.

Treating Boiler Water

Soda ash and lime are much used for treating boiler water. If the water contains more than 10 grains of hardness, good practice is to treat it outside of the boiler. Zeolite is much used, but not for very hard water because of the concentration of the sodium compounds. Zeolites are silicates in the use of which the calcium and magnesium salts in water are changed to sodium salt and the water is thus softened. Spent zeolite is reactivated by pumping a solution of common salt through the bed. Thus sodium zeolite is again formed.

Trisodium phosphate, if added to water, will throw the calcium, magnesium and iron out of solution as phosphates. The sulfates, silicates and carbonates will combine with the sodium and remain in solution. A slight excess of phosphate is used. Its use has given excellent results in some cases and indifferent results in others, but in all cases has made some improvement.

Sodium alumite is put on the market in solution with caustic soda and soda ash and is a strong coagulant. Precipitates formed by its use are in large particles and float easily and do not bake or foam.

There is a decided tendency to substitute evaporators for chemical treatment, coupling them in parallel with one stage of feed heating or taking the place of one.

Internal treatment of boiler water by means of various standard reagents and circulation of the treated water through an outside tank to deposit the sludge therein is a new method[6] of water treatment.

Johnston and Farrell[7] found that the cost of treating 241,500 gallons of raw water, at Parco, Wyoming, with soda ash and lime was $0.143 per 1000 gallons. Readily apparent savings were $5668 per year.

Feed Water Heaters

Feed water heaters are of three classes; open heaters, closed heaters and economizers. Exhaust steam is used in the first two and stack gas in the latter. In closed feed water heaters the steam and water do not mix.

[2]Heat Engineering, 3, 6, 2, 1928.
[3]Power, July 31, p.187.
[4]This is frequently the preheated air supply for the boiler.
[5]Power, April 9, 1929, p.582.
[6]Nat. Pet. News, Oct. 30, 1929, p.107.
[7]Oil & Gas Jour., June 14, 1928, p.146.

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They are used on good water else scale will deposit. In open heaters steam and water are directly mixed and can also be used on bad water because scale is easily removed.

Economizers are bulky, need a brick or metal casing, and are subject to corrosion, but are used on forced boilers and large units.

Feed water saving can be calculated as follows:

Steam at 160 pounds gauge has a temperature of 371 F. If the feed water is 60 F. it must have 311 B.t.u. added to it before it can be turned to steam. 1167.8 B.t.u. are necessary to raise one pound of water from 60 to 371 F. and convert it to steam at 160 pounds pressure. Hence the 311 B.t.u. will be 27 per cent of the total, so that any method whereby some of this can be saved by waste heat is of importance.

Steam Waste

Some refineries use too much steam. Stills are given all they can take. This should be reduced to a point where distillates show good color and odor. In calibrating the amount of steam needed, the distillate and water can be collected together and the amount measured.

At some plants steam is metered as it leaves the boiler house and a record kept of the amount delivered to the different departments. In this way the department foremen will take an interest in the amount they use and try to keep it down to an economical amount.

Small leaks will be stopped, insulation kept in repair, bad fittings and valves replaced, traps installed, proper sized lines used and undue use of steam stopped. Recording pressure gauges should be used in addition to the ordinary kind to check the fireman's activities.

Several years ago Ross[8] made a study of boiler plants at 19 refineries and found that by simply changing the method of firing it was possible to save $10 per horsepower per year and that with efficient equipment an additional $22 per horsepower per year was saved. Bell[9] has reduced steam waste to readily understandable terms. He found that from insulated steam lines 1 foot long and 1 to 4 inches in diameter there may be wasted from the bare pipe by radiation, considering 100-pound steam, money values of $1.32 to $4.54 per year. Further, 100-pound steam leaking from a ⅛-inch orifice represents $327 per year; also that a 30,000 barrel plant loses $8300 per year if 15 per cent more steam than normal is used. Other data[10] are that at a gauge pressure of 150 pounds per square inch, with coal at $4.00 per ton, the wasted steam will vary in value, for orifices of 1/16 to ⅜-inch size, from $45 to $1,600 per year, and at 500 pounds from $84 to $3,010 per year.

[8]Nat. Pet. Assoc., Atlantic City, 1926.
[9]Nat. Pet. News. April 21, 1926.
[10]Refiner, Feb. 1928, p.75.

Central Power Plants

Central power plants are coming into use in large refineries. At some plants where the amount of steam needed is large, as in refineries running lubricating plants, superheated steam is fed to the turbines and exhausted therefrom at sufficient pressure and superheat for process work. If only a limited amount of process steam is used the turbines are run condensing and steam bled out for process work.

The main auxiliaries are operated electrically and steam for feed water is bled off in multistages from the main turbine units. This is present practice in large power stations.

At one refinery processing 6500 barrels of oil per day with cracking units and a wax plant, the steam is supplied by three 500 horsepower boilers at 250 pounds and delivered to two 1,000 K.W. Westinghouse 2-stage turbo-generators where electric current is developed for the power purposes around the plant. Steam exhausts from these turbines into a 120-pound steam main supplying steam to the refinery water and oil charging pumps and for process work.

Part of the steam is returned at 2-pound pressure for heating building and the rest is sent to the low pressure element of the turbine and exhausted to a condenser. The condensate with make-up water from a single effect evaporator is collected in a water tank to produce boiler feed water at 200 F. After the 125-pound steam passes to the process units over 75 per cent of it is still available at 2 pounds pressure.

At another refinery steam is developed at 375 pounds in four boilers and at 110 pounds in four others and passes to high pressure turbines from which it is exhausted at 110 pounds where it joins the 110-pound steam from the low pressure boilers for refinery uses. Some of it heats feed water and the rest passes to low pressure turbines, generating electricity, and exhausts from the turbines at 10 pounds.

At another plant, steam enters a turbine at 145 pounds and 150 F., passing through two stages, and some of it is reduced to 25 pounds. The rest passes through eight more turbine stages and is exhausted at 1½ inches, absolute. Condensed steam is pumped to the boiler feed water heater.

The advantages of central power, generating electricity as a by-product from steam, can be illustrated by an example.

Assume a pumping duty of 25 brake horsepower at the liquid end of the pumps. This is the equivalent of 428 gallons per minute of liquid against 100 pounds head. Also assume that this pumping is done by direct steam pumps scattered over the plant and practically all the exhaust steam wasted. There would be needed 125 boiler horsepower of steam at a yearly fuel cost of $12,000. Now assume that the same refinery makes electric current in a central plant as a by-product of the process steam.

To supply 25 brake horse power to the water ends of the various pumps will require 38½ horsepower to be expended by the various motors. If one assumes 15 per cent loss, this increases to 45.3 horsepower. Assume 80 per cent mechanical efficiency in the engine generator unit and it is found necessary for the engine or turbine to generate 56.6 horsepower, call it 60 horsepower.

Sixty brake horsepower represents 152,790 B.t.u. per hour, the energy to be removed from the steam. This is 4.6 boiler horsepower and will cost $475.00 yearly for fuel as against $12,000.00 using steam pumps and wasting the exhaust. The steam formerly used in pumping is now almost a total saving. Of course, if the exhaust steam were collected from the steam pumps and used in process work, much of the $12,000 could be saved, but even so there would be considerable loss due to heat loss and consequent condensation in the multiplicity of small steam lines. Probably in practice nearly one-third would be wasted.

Turbines, Diesels and Steam Engines

The choice of a prime mover rests between a steam engine, a turbine and a Diesel engine. The turbine is simpler, more reliable and slightly more economical in large sizes than the steam engine. The present tendency is towards turbines. Those of 1903 had an overall efficiency of 14.5 per cent. Today the highest thermal efficiency of a turbine is 38.0 per cent with bleeding and two reheatings, but this is for high pressure boiler installations.

Above 250 horsepower for electrical power they cost less than engine driven generators. Diesels will do more work for a given heat input than any other prime mover, but their general use has been hampered through fear of an oil shortage, remote as that contingency is at the moment. But steam is needed for process work so turbines have the call. Further Diesels are more complicated.

The steam engine does not fare as badly in the comparison of efficiencies as some people think. In large installations using high pressure steam triple expansion engines are often used and even quadruple in some cases but the triple expansion type represents the limit of economy. Engine economy can be increased by using superheated steam, or by using a vacuum condenser, but here no steam is available for process work. Turbines will only show a 5 per cent increase in economy over modern steam engines in large units.

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The accompanying view is one of the machine shop bays—a part of the new plant at Mt. Vernon, Ill. Its modern construction and the complete modern tooling have never been paralleled in structures given over exclusively to the production of processing equipment.

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favor of oil and gas, because the latter are more finely divided, disappear to a considerable degree. Less excess air can be used than with stokers, more nearly smokeless operation secured, uniform temperature conditions maintained, and more complete combustion secured.

A change from coal to oil can be easily made. Against this is the extra cost of powdering the coal, and an increase in efficiency in the development of stokers.

Water Cooling System

Water upon evaporation cools itself. Its latent heat of evaporation is 970 B.t.u. per pound. It absorbs this much heat when it evaporates. Assume that 1,000,000 gallons of water at 100 F. temperature is sprayed or cooled in the tower and that 2½ per cent vaporizes. Hence (2½ x 1,000,000 x 8.33) = 209,250 pounds of water vaporized. Then (970 x 209,250) = 202,952,500 B.t.u. will be available to cool 1,000,000 gallons (8,330,000 pounds) of water. It will reduce the temperature of this water $\frac{202,952,500}{8,330,000}$ = 24.4 F. Hence instead of water at 100 F. there will be available water of 75.6 F. for cooling purposes.

The following table shows the evaporation loss when water is cooled.

Temp. Ranges through which Water is Cooled, °F.	Percentage Loss
5	0.52
10	1.03
15	1.55
20	2.05
25	2.58
30	3.09
40	4.13
50	5.16

The lowest temperature available theoretically is the wet bulb temperature. This degree of cooling is never attained in practice.

The oldest cooling device is the pond but evaporation is low because a small surface is presented. The spray system is simple and usually used for plants which require a moderate cooling range. The finer the spray the greater the evaporation, but if too fine the sprays clog up. It is difficult to cool water through more than 15 degrees F. with one spraying while a deck type tower will easily cool through any desired range.

Atmospheric towers are the simplest and cheapest but occupy the most space. They are built 10 to 16 decks high and will handle about 1½ gallons of water per minute. Natural draft towers are not as much used as forced draft ones. In the former draft is set up by the warm water imparting part of its heat to the air. But hot air is more or less kept in the enclosure. Forced draft towers are the most efficient and require less space. Air is forced through the latticed work by means of fans. However the latter consume power and require attention.

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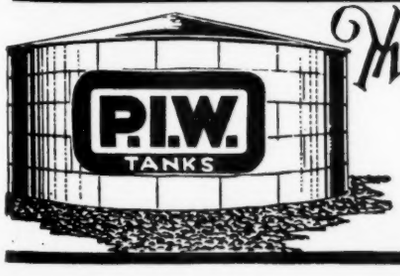

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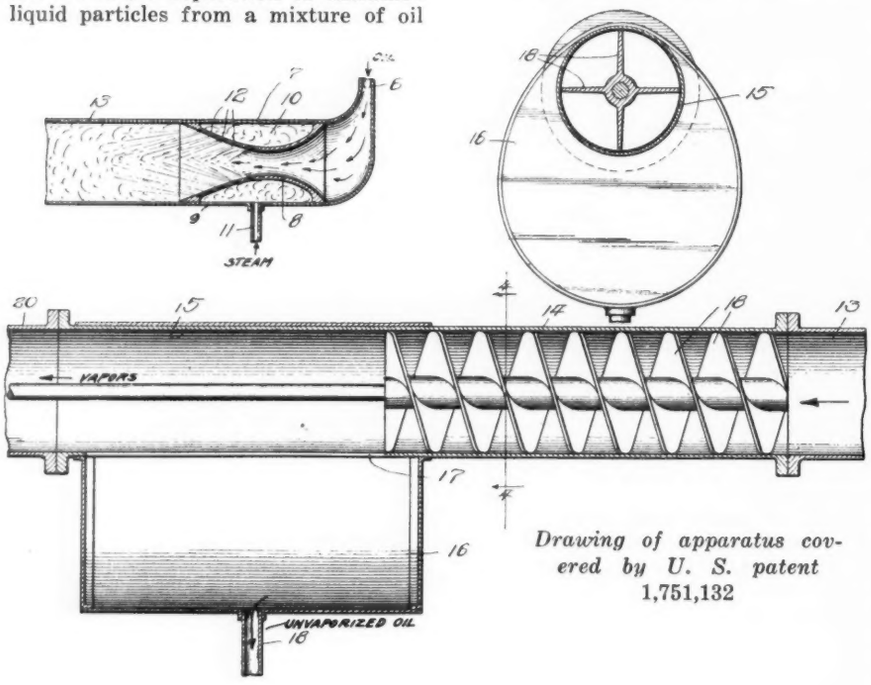
New Refining Patents

Continuous Distillation. U. S. P. 1,751,132, March 18, 1930 Robert E. Wilson, Assignor to Standard Oil Co. of Indiana.

THIS invention is a contribution to the mechanical aspects of distillation of petroleum oils. Its essential feature is the separation of entrained liquid particles from a mixture of oil vapors and superheated steam. This separation is effected by bringing the vapor and steam to thermal equilibrium in a pipe, whirling the mixture to deposit liquid particles on the pipe wall, and drawing off the liquid layer thus formed.



Drawing of apparatus covered by U. S. patent 1,751,132

Steam at 1000 to 1200 F. is forced into a conduit at a velocity of 2000 to 3000 feet per second, in such a way that it expands, atomizes the incoming oil, and is itself cooled to about 700 to 750 F. and slowed down to about 200 to 500 feet per second. The length of this conduit may be, according to operating conditions, about 40 to 80 feet. This treatment vaporizes the oil without application of excessive heat and so avoids cracking.

Thermal equilibrium having been attained, the mixture enters the central conduit of a separator, in which a revolving screw propeller imparts to the mixture a rapid whirling motion. The particles of unvaporized oil are driven outward, forming a liquid layer which is collected in a separator. The oil vapor and steam then pass on to suitable condensing or pressure control equipment.

In the drawing, 13 is the end of the conduit in which thermal equilibrium is attained; 14 and 15 are portions of the separator conduit; 16 is a casing, eccentric with the separator conduit, for receiving the liquid oil; 17 is a longitudinal slit through which the liquid escapes from 15 into 16; 18 represents, in the upper part of the drawing, the screw propeller and in the lower part, an outlet for the liquid oil; and 20 is the conduit for treated vapor. The necessary pressure differential at the steam inlet is obtained by maintaining a vacuum in the long conduit 13.

* * *

Fractionator. U. S. P. 1,750,306, March 11, 1930, Eliot H. Harris, Assignor to Benjamin M. Herr.

THIS invention was developed for the purpose of narrowing the gap between theory and practice in the fractionation of crude oil and its distillates. The fundamental principles which govern fractionation of mixtures are so well known that a given component can be separated from a complex mixture in practically pure state, for example a preferred hydrocarbon in the gasoline range from crude oil. But practice has been unable to keep step with theory, because the cost of apparatus to carry out the known theoretical operations has been too high for profitable production.

The principal difficulty is to provide gradual cooling of the vapors to be fractionated; the number of cooling chambers needed to avoid sudden temperature changes is excessive and much too expensive if the requirements of the theory of complete fractionation are met. In this invention, the difficulty is overcome by an arrangement of baffles such that relatively few successive cooling chambers need be used.

This is accomplished by providing each cooling chamber with a series of baffles, spaced in accordance with the laws of progressively regulated heat transfer so as to subject the ascending vapor to gradually decreasing temperature. The spacing of the baffles can be calculated for each cooling chamber from the liquid and vapor phase curves of the particular liquid mixture to be fractionated. The spacing or pitch of the baffles is adjusted according to the temperature range to which the vapors are to be subjected and according to the rate of heat transfer per unit of length of the tubes traversing the chambers. The rate of heat transfer is determined empirically, since it depends on the particular apparatus employed.

As an embodiment of this invention, a fractionating tower is shown which has 3 cooling chambers. Each has its own spacing of baffles, predetermined from the liquid and vapor phase curves of the oil, and the heat transfer rate of the apparatus. Fractionators may be made with less or more cooling chambers, according to operating conditions and the effect desired; an efficient tower may even be designed with only one cooling chamber.

The advantage of the new apparatus is the great economy with which a complete fractionation can be effected; thus, a gasoline of desired composition can be produced at low cost, comparing favorably with the cost of producing less satisfactory but commercially successful gasolines with older types of apparatus.

Builds Return Unit in Naples

CLEVELAND, April 10.—A new Dubbs pressure still rerun unit is to be built at its Barra, Naples, plant by the Societe Anonima Benzina Italiana, "Benit." The unit will be a pipe still equipped with modern heat exchangers, bubble type fractionating tower and control devices. Equipment for the plant is to be furnished by Arthur G. McKee & Co. of Cleveland. This company also will supervise the installation.

ADVERTISING PAGES REMOVED

Empire Modernizing Gasoline Plant At Arkansas City, Kans.

By John Power
N. P. N. STAFF WRITER

ARKANSAS CITY, March 22

THE Arkansas City gasoline plant of the Empire Oil and Refining Co. is being remodeled and brought up to date. From the absorber outlets on, practically all of the equipment is being replaced with more modern installations which are expected to increase materially the efficiency of the plant.

The original plant was built in the winter of 1917-18. It operated at first on gas from the Dilworth gas field, in northern Kay county, Oklahoma. With the decline of the Dilworth field, the supply of gas was too limited to justify the expense of installing new equipment as that in use became obsolete.

Further development, however, resulting in gas production to the south of the field, and over toward Deer Creek, Grant county, as well as the extension of the Cities Service gas system, made an additional supply available, until at the present time, it is anticipated that some 35 million cubic feet of gas per day will be available to the plant.

The gas is extremely lean, though, and it is only by virtue of the great volume handled that the plant is expected to justify the expense of putting it up in first class condition.

The original scrubbers and absorbers will be used, but from the latter point on, clear through to the run-down tanks, the equipment is to be new. As much of the old equipment as possible will be kept as standby apparatus for emergency use, but such things as the old stills, old gasoline tanks, etc. are to be junked. The still shells will be converted to light storage tanks, it is expected.

The old absorber towers, of which there are eight, are of the packed type, designed by the Empire's engineers. They are but 30 inches in diameter, by about 40 feet high. The rich mineral seal oil from the absorbers will be passed through the system by a Worthington type 10-H, fully enclosed self oiling duplex power pump, direct connected by a vertical steam engine.

The new heat transfer equipment is Jackson type. It consists of four heat exchangers and two preheaters. From the heating equipment the mineral seal oil is passed to a high pressure vent tank. The location of the vent tank between the heat transfer apparatus and the still is the main deviation from standard gasoline plant practice in the layout. This design is expected to relieve the load of uncondensable vapors on the condenser.

The fractions vented from the high pressure vent tank are sent back to the main gas system which supplies the plant with raw gas. The rich mineral seal oil continues its journey to the still. From there the usual gasoline plant cycle is completed. Gases vented from sources other than the high pressure vent tank are handled by a tail, or reabsorber, which discharges into the product line.

No residue disposal, or apportioning problems vex the operators of the plant. The residue is discharged into the Cities Service gas system, passing into the line running from Dilworth to Cambridge. From Cambridge the gas may go to any of the several cities which are served by the system.

The temperatures and operating conditions of the plant will be standard practice. Control of the product will be by gasoline reflux, and steam.

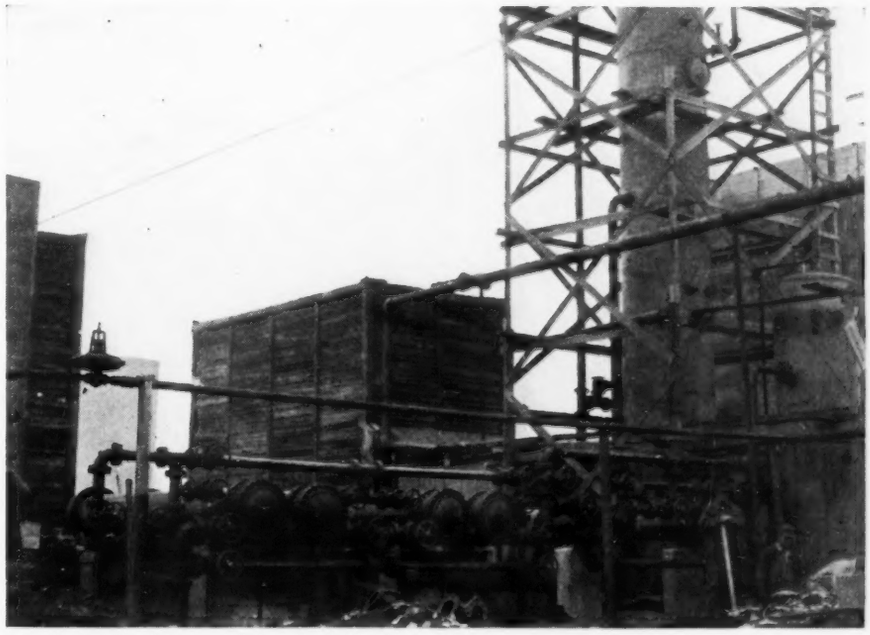
The old gasoline storage tanks had to be replaced. In their stead are being put 12 10 by 40-foot tanks, which will be insulated against corrosion and buried. Each tank has a capacity of 25,000 gallons.

Considerable care is being taken to insulate the tanks against corrosion. A base coat of special Biturine enamel was applied. Over this goes one thickness of Phillips-Carey tar-saturated asbestos pipe felt. The latter is being wrapped the long way of the tanks, in individual sections around the tanks. The felt strips are 36 inches wide, and will overlap six inches.

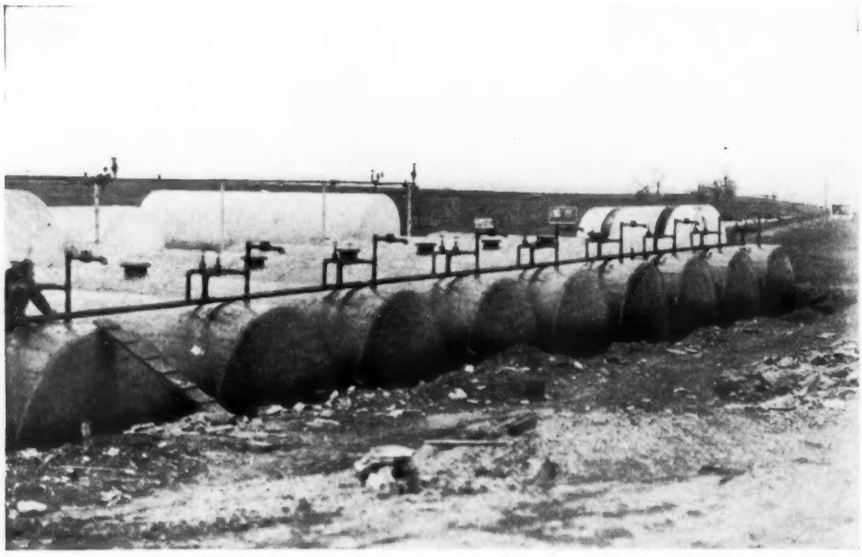
The overlaps will offset each other at least a foot so that there will not be a continuous seam along any one side. Another coat of enamel will be applied over the felt to care for any stresses or abrasions due to backfill.

The rear, or west ends of the tanks are to be treated in the same manner as the bodies of the tanks, with a 6-inch overlap on the sides. The east, or front ends of the tanks will be painted white, in addition to the covering.

Approximately 1700 pounds of enamel, five rolls of felt (36 feet by 108 feet) and six gallons of primer will be required for the job, it is estimated. Three of the tanks in the



1—*Heat transfer equipment, still, and high-pressure vent tank being installed at the Arkansas City gasoline plant of the Empire Oil & Refining Co.*



Gasoline storage tanks are insulated against corrosion

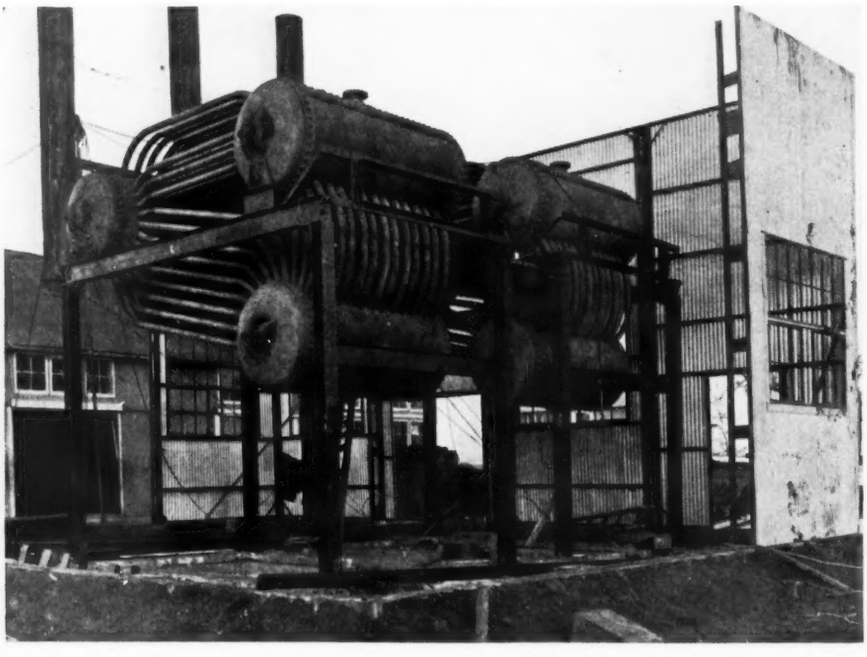
battery have been completed, and work is going forward on the remaining nine.

The cooling tower erected for the new plant was one salvaged from the Burbank field, where it had seen considerable service. The tower is the spray type, using Braun coils.

All equipment is steam operated. The boilers are 200-pound Voight water tube type, rated at 150 horsepower each. They are set in permanent brick settings. They are fired by burners under the back mud drum.

Although believed to be more efficient for this type of work than the oil country type boiler frequently seen, the design of the flues, etc. is such that they may prove difficult to clean. To keep the boilers in the best condition possible over the longest period of time, water softeners are being used to insure pure boiler feed water at all times.

During the erection of the new equipment the old has been kept in operation. This has necessitated the doing of practically all welding at a welding house removed from the position into which the connections would eventually have to fit. A welding house was erected, and great care in all measurements was taken to make sure that the various parts fit properly after they had been welded up. All blue prints were carefully scaled, and extreme care taken in the reading and checking of the measurements they called for. According to the welders, remarkably little trouble has been experienced so far in getting the parts to fit after the welding has been done.



Boiler installation for the modernized plant at Arkansas City. The boilers are fired from bricked-in burners beneath the back mud drum

Konawa Pool Has New Natural Gasoline Plant

THE first natural gasoline plant to be built in the Konawa pool, south of Little River, has started up. It belongs to the Empire Oil & Refining Co. and is capable of handling some 10 million cubic feet of gas per day. The plant is of the absorption type, operating at 50 pounds pressure. It is equipped with Clark compressors, and Braun heat transfer equipment.

* * *

N. G. A. Plant Operators To Meet at Breckenridge

THE Annual Plant Operators Meeting of the Natural Gasoline Association is scheduled for April 22, at Breckenridge, Texas. The meeting is under the chairmanship of E. R. Lederer, of the Texas Pacific Coal & Oil Co. Headquarters are to be the City Hall Auditorium.

The meeting will occupy the full day. In the morning four papers will be read, as follows: "Boiler Operation and Maintenance," by L. D. Scarborough, of the Boiler Inspection and Insurance Co., Dallas; "Meters and Operation," by D. A. Sillers, Lone Star Gas Co., Dallas; safety talks by H. N. Blakeslee, National Safety Council, Chicago, and Don J. Wallace, director of the Safety Section of the Mid-Continent Oil & Gas Association, Tulsa; "Care and Operation of Gasoline Plant Machinery," by D. B. Hiatt, Texas Pacific Coal & Oil Co., Thurber, Texas.

After luncheon three more papers and an open discussion will occupy the rest of the program. The papers are: "Regulators and Controlling Devices," by E. H. Triphaus, Taylor Instrument Co., Dallas; "Loading and Handling of Finished Gasoline," by Otto Peters, Brooks-Hanlon Gasoline Co., Breckenridge; "General Maintenance of Field Gathering Lines and Drips," by E. F. Guidinger, Phillips Petroleum Co., Bartlesville, Okla. The remainder of the time will be devoted to open discussion.

* * *

Arkansas Fuel Oil Co. To Build Gasoline Plant

ERECTION of a natural gasoline plant in the Carterville field has been announced by the Arkansas Fuel Oil Co., subsidiary of the Arkansas Natural Gas Co. Work on the plant is to start at once. The new plant was announced shortly after it was made known that the Arkansas Fuel Oil Co. had purchased 827 acres, with five producing and five drilling wells. The purchase price was not made public.

A so-called guarantee of immunity which merely protects you against the expense of defending any suits for infringement is like an accident insurance policy which merely pays for your ride in the ambulance

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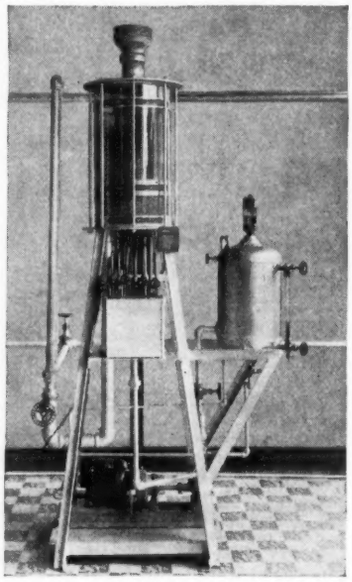

Working Model of Campbell MIST-D-FIER as shown at Oil Equipment & Engineering Exposition recently held in Los Angeles.

In the Receiving Line

THE Oil Equipment & Engineering Exposition at Los Angeles has come and gone and great was the success thereof, thanks to the generalship of its promoters.

Of the many exhibits viewed by its thousands of visitors, possibly none attracted more attention than the working model, here shown, of the Campbell MIST-D-FIER. Day in and day out it was put through its paces. Hundreds witnessed the white-paper test and went away convinced that the Campbell MIST-D-FIER takes ALL the mist out of the gas line.

If you did not see the test, write today for Bulletin No. 6. It tells the story of complete mist elimination.

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Gas Measurement Course In Session at Norman

THE Southwestern Gas Measurement Short Course, Conducted by the College of Engineering, University of Oklahoma at Norman, is in session this week. Arrangements have been made this year to have the course as practical as possible by distributing throughout the building where the classes are conducted the various types and makes of gas measuring equipment, thus providing an opportunity for more shop work.

General subjects are covered in assembly meetings held in the Auditorium each morning of the course. The afternoons are devoted to class work on each manufacturer's equipment, the classes conducted by representatives of the manufacturers, and gas company men. Special prizes are offered those attending the meeting for the best papers or reports written about the meter school by those attending.

Subjects treated include Domestic Meters, Large Capacity Meters, Orifice Meters, Regulators, Elementary Gas Laws, Calculation of Charts, Special Industrial Installations, Specific Gravity Balance, and many others of interest and value to those dealing with either dry or wet gas.

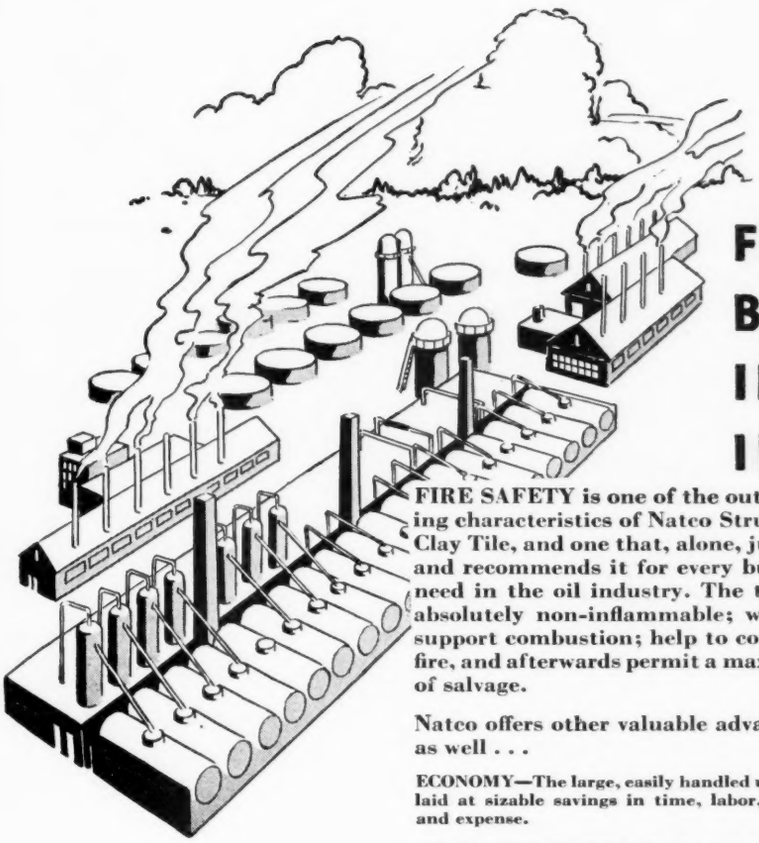
The Gas Measurement Course is an annual affair, conducted by the College of Engineering with the assistance of the Corporation Commission of Oklahoma, the Oklahoma Utilities Association, and the Natural Gas Division of the American Gas Association, and the Natural Gasoline Association of America. Manufacturers of gas measurement equipment of all kinds also cooperate with the school by having representatives explain their equipment to the students. The men who attend the three-day session are employed by gas companies, the gas and natural gasoline departments of oil companies throughout the Mid-Continent.

The following is a list of the manufacturers represented at the school: The Bristol Co., Chaplin-Fulton Mfg. Co., B. V. Emery & Co., The Foxboro Co., Metric Works, American Meter Co., McEwen Regulator Co., McGaughy Integrator Co., Pittsburg Equitable Meter Co., Refinery Supply Co., Robinson Orifice Fitting Co., Sprague Meter Co., Taylor Instrument Co., Wescott & Greis, Inc.

* * *

Cities Service Extends Gas Line Into Nebraska

A 116-mile extension of its gas distributing system to serve Nebraska has been announced by the Cities Service Gas Co. The new line, which is to be 8-inch, will extend from Lyons, Kansas, to Superior, Nebraska. The project, which will include the building of two compressor



FOR EVERY BUILDING NEED IN THE OIL INDUSTRY

FIRE SAFETY is one of the outstanding characteristics of Natco Structural Clay Tile, and one that, alone, justifies and recommends it for every building need in the oil industry. The tile are absolutely non-inflammable; will not support combustion; help to confine a fire, and afterwards permit a maximum of salvage.

Natco offers other valuable advantages as well . . .

ECONOMY—The large, easily handled units are laid at sizable savings in time, labor, mortar and expense.

SPEEDY CONSTRUCTION—Each Natco Tile is equivalent in volume to several brick. Structures go up in a hurry, are quickly ready for use.

PERMANENCE—Natco Tile are permanent in character and form; never rust, rot, or warp.

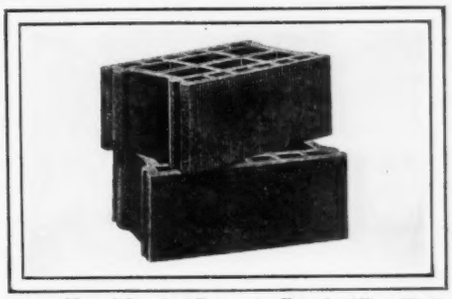
LOW MAINTENANCE—Painting, patching and repair work, necessary with most forms of construction, are reduced to an absolute minimum.

LOW DEPRECIATION—Buildings built of Natco Structural Clay Tile are highly resistive to destruction and decay. Depreciation is usually figured at ½% a year.

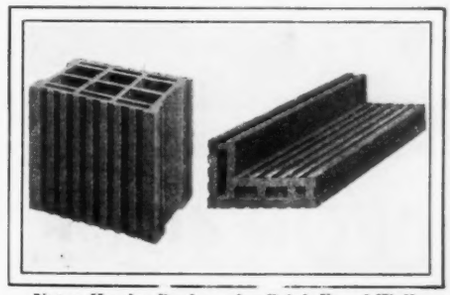
DECREASED HEAT LOSS—All Natco Structural Clay Tile have high insulating value. Dead air spaces retard heat and cold to a great degree.

Natco offers for finished face structures Natco Tex-Tile and Combed Face; for brick faced structures, Natco Header Backer and Unibacker; for stuccoed structures, Natco Double Shell Load Bearing Tile; for insulating and protecting oil tanks, Natco Segmen Tile.

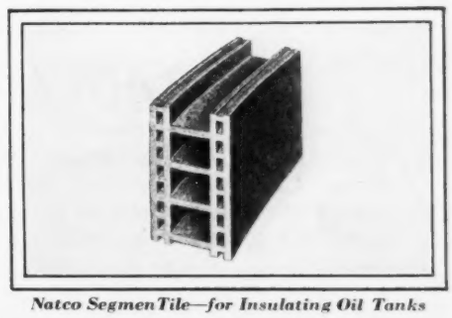
Full details on specific units will be gladly furnished; just write.



Natco Glazed Combed Face—for Finished Face Walls



Natco Header Backer—for Brick Faced Walls



Natco SegmenTile—for Insulating Oil Tanks

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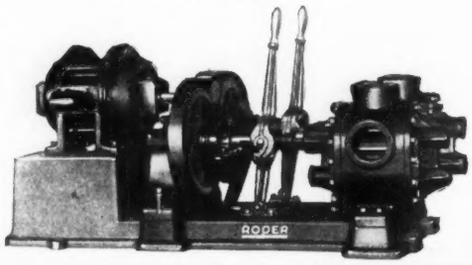

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Send your order or wire your nearest mailing point, and the OILGRAM will be started to you immediately. Make check payable to The W. C. Platt Company or Platt's Oilgram.

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stations, is expected to be completed by next fall.

The new line will pass through Ellworth, Lincoln, Beloit, and Mankato. Branch line will be laid to serve the additional towns of Sylvan Grove, Luray, Osborne, Smith Center, and other towns.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

43352.—**Lubricating and cylinder oils,** Glasgow, Scotland, purchase.

43788.—**Yellow and white petroleum,** Berlin, Germany, purchase.

43820.—**Petroleum asphalt,** Berlin, Germany, agency.

43827.—**Candle wax,** Valparaiso, Chile, agency.

43829.—**Gasoline, asphalt products, fuel oils, greases, petrolatum and paraffin,** Brussels, Belgium, agency.

43843.—**Paraffin,** Aubervilliers, France, agency.

43869.—**Turpentine substitute,** Surabaya, Java, purchase.

43905.—**Paraffin,** Hamburg, Germany, agency.

43925.—**Gasoline and kerosene,** Paris, France, agency.

43926.—**Lubricating oils,** Bagdad, Iraq, agency.

44139.—**Oils for insulating cable, locomotive axles, machines and motors,** Berlin, Germany, purchase.

44192.—**Steam cylinder oil,** Cologne, Germany, purchase.

44195.—**Lubricating and machine oils,** asphaltum and paraffin, Hamburg, Germany, agency.

44222. — **Paraffin,** Liverpool, England, purchase.

44253.—**Paraffin,** Valparaiso, Chile, agency.

44284.—**Paraffin,** Valparaiso, Chile, agency.

44285. — **Bitumen and asphaltic oil residue,** Milan, Italy, agency.

44287.—**Benzine, motor fuel, and other oils,** Leipzig, purchase.

44305.—**Cable insulating oils,** Hanover, Germany, purchase or agency.

44306—**Automobile and machine oils,** Berlin, Germany, agency.

44365—**Medicinal petroleum oils and jellies,** Melbourne, Australia, purchase and agency.

44366.—**Cylinder oils,** Budapest, Hungary, agency.

44427. — **Gasoline and kerosene,** Tientsin, agency.

44630.—**Asphalt,** Antwerp, Belgium, sole agency.

44642.—**Benzine and diesel oil,** Berlin, Germany, agency.

44737.—**Paraffin, ceresin, and ozokerit,** Copenhagen, Denmark, purchase and agency.

44743.—**Asphalt and paraffin,** Antwerp, Belgium, agency.

44748.—**Lubricating and fuel oils,** bitumen and asphalt, Milan, Italy, agency.

44519.—**Oils and greases,** Prague, Czechoslovakia, agency.

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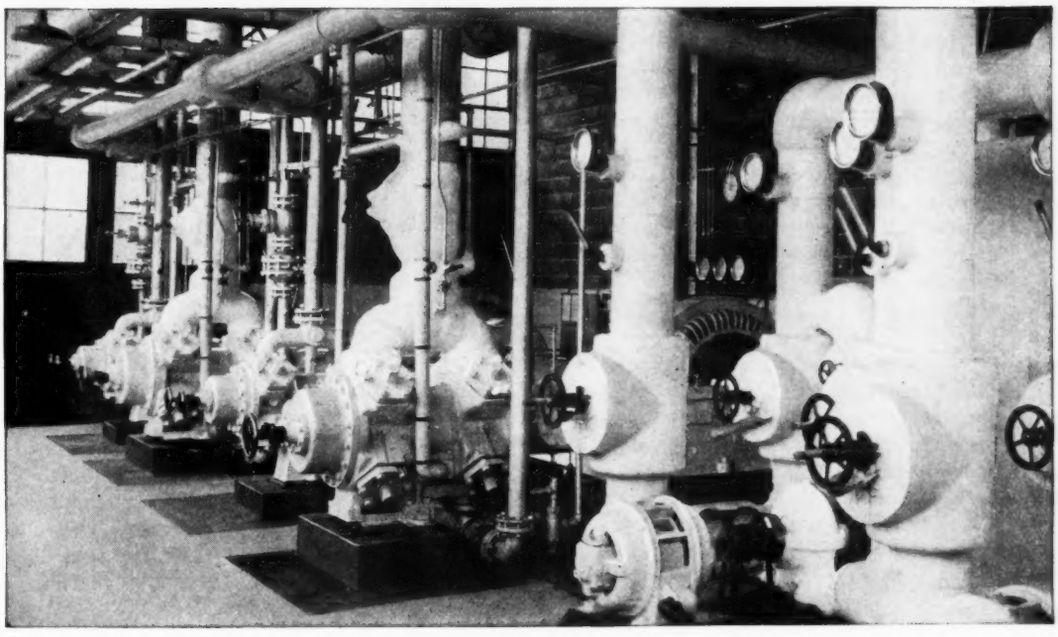
BETTER economy
INCREASED capacity



You are buying proved performance when you invest in a Carbondale Refrigerating System. That is why so many of America's leading refiners have chosen it. And they are enjoying the lasting efficiency which is inherent to Carbondale Systems, many of which are still rendering satisfactory service after more than 30 years of practically continuous operation.

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CARMACO *for Refiners*

Visiting Around the Refineries

By Arch L. Foster

National Petroleum News

THE SIMMS OIL CO. has been doing considerable revamping of its Dallas plant.

A pair of cross units have been rebuilt and fitted for more flexible operation. These units now employ two soaking drums each connected so that they may be used either in series or in parallel, as the operators may see fit. According to O. Mingus, plant superintendent, it has been found that, under the present method of operation with the charging stock used, better results are obtained by connecting the soaking drums in series.

New pipe stills have also been installed for these cracking units, increasing the throughput and effecting a considerable saving by increasing the heat efficiency of the plant.

New Union Twin Simplex hot oil pumps have been added to the installation. Each unit now charges about 1300 barrels of fresh stock per day which, with recycling, make a total of about 3400 barrels daily through the plant. Fifty-five to 56 per cent of the charges is obtained as end point gasoline. Mr. Mingus states that with the present operating cycle very little coke is formed, so little in fact that its disposal presents no problem whatever.

The engineering work was done by the Refinery Engineers, Inc., of Kansas City. The same company recently completed a vapor recovery plant which handles 1½ million cubic feet of still gases per day, recovering 200 to 250 barrels of light naphtha.

* * *

CONTINENTAL REFINING CO. is reported to be building six 55,000-barrel crude storage tanks north of Wichita Falls to take care of production in this locality.

* * *

P. S. TARBOX, general manager of the Independent Refining Co. over in Oil City, Pa., informs us that his company has contracted for the installation of a new boiler house and two new 500-B.H.P. Heine boilers, which will be completed in the near future. Contracts have also been let for doubling the capacity of their filter plant, 30 new 10-ton filters being added. A 10-hearth Nichols-Herreshoff clay burner rejuvenates the fullers earth for the plant. A water softening plant also forms a part of the new construction under way.

These Pennsylvania refiners are certainly getting busy; more power to 'em!

* * *

THE WAGNER REFINING CO. of Electra, have just completed a 6-inch pipe line from the Wilbarger district to the refining center here. Oil delivered through this line will supply many of the local refineries, simplifying in many cases the problem of crude supply. R. L. More is General Manager of the company.

* * *

C. O. GARBRECHT, formerly superintendent of the Kettle Creek Refining Co., El Dorado, Arkansas refinery, has been transferred to Ardmore, Oklahoma, as superintendent of the Imperial Refining Co. plant. Gustav Staub, formerly with the Marland Refining Co. and the White Oak Refining Co. succeeds Mr. Garbrecht at El Dorado.

* * *

THE TAXMAN CO., which recently took over the old Miller plant here, has just completed a new topping-cracking unit designed and built by the Smith Engineering Co. of Kansas City, to supersede the older distillation equipment of the plant. The plant operates on Wilbarger crude.

Earl Roff, late of the Smith Co., has been employed to take charge of the plant. Mr. Roff has had several years' experience in handling cracking plants, including the Cross and other processes.

* * *

THE AMERICAN REFINING PROPERTIES plant at Wichita Falls has been augmented by the addition of a Gray vapor phase treating tower to the Dubbs unit now operated at that plant. A new bubble tower has also been installed between the dephlegmators and the Gray tower. By this combination D. F. Gerstenberger, plant manager, states he will obtain end point gasoline direct from the cracking battery without further rerunning or treatment.

* * *

W. T. HANCOCK, general manager of the Hancock Oil Co. of Los Angeles has been making a tour of inspection of Mid-Continent and Eastern refineries, investigating conditions and discussing refining methods with various refiners in those sections. It appears that his company is contemplating some expansion and is studying methods employed by different refiners for the purpose of determining the proper course of action.

* * *

GRAYBURG OIL CO. have just begun operating a new topping unit, at their San Antonio plant, which will produce end point straight run gasoline, some kerosene, special naphthas and distillates as the market may demand, the topped crude being charged to cracking stills. Frank Hovell, manager, expects to increase the throughput of the plant materially when this unit is on the job regularly, as well as to produce better products due to better fractionation.

* * *

THE CONTINENTAL OIL CO. recently placed in operation a new pressure distillate stabilization plant at its Ponca City refinery. This plant was built by the Refinery Engineers, Inc., Kansas City, and will stabilize 6500 barrels per day of Dubbs P. D., removing about ten per cent of the distillate, consisting chiefly of butane, which will be sweetened separately, mixed with natural gasoline, and employed as a light blending agent. This product will be kept in pressure storage until blended.

The remainder of the pressure distillate will be treated and rectified in the regular manner heretofore employed at the refinery. Refinery officials have not yet collected enough data to state conclusively the saving thus effected, but the light fraction so obtained represents rather closely the losses on redistillation of the P. D. as formerly handled.

ADVERTISING PAGES REMOVED

Advertising of Premium Goods Booms Total Sales for Ohio Standard

CLEVELAND, April 5

THE soundness of the principle that advertising can well be concentrated on some premium product and sales of other products of the company will also be stimulated has been practically demonstrated by the Standard Oil Co. of Ohio, the annual report of W. T. Holliday, its president, indicates.

The Standard of Ohio concentrated its advertising efforts last year on its premium Sohio Ethyl gasoline and New Sohio motor oil. Its sales of the Sohio gasoline were more than 200 per cent larger last year than in 1928 and its sales of branded motor oil were 31 per cent larger.

The company's total gasoline sales in Ohio last year showed a 41 per cent increase as against a 12 per cent increase by all companies operating in the state. The Standard's gain was not confined alone to the premium product, as its Red Crown gasoline sales were 17 per cent larger than in 1928. Its total gasoline sales were 115 per cent larger than in 1927, the year before Mr. Holliday became president.

That the motoring public is more quality-minded than price-minded is indicated by the fact that by December the Standard's tank wagon and service station sales of Sohio Ethyl gasoline were 57 per cent of its total gasoline sales and its service station sales of the premium product that month were 65.7 per cent of its total gasoline and service station sales.

The New Sohio motor oil was introduced last May with a large advertising accompaniment. This oil, like its predecessor under the name of Sohio, sold at a premium but, with the advertising campaign backing the improved product, the proportion of sales of the premium oil to total motor oil sales increased immediately from 16 to 36 per cent of all motor oil sales and the volume in December was 45 per cent of the total tank wagon and service station motor oil sales. Sales at service stations in December were 56.9 per cent premium oil, Mr. Holliday reported.

"The management desires to emphasize that its objective is not to get a greater total gallonage for the mere sake of size," Mr. Holliday wrote of the company's selling policy, "but rather to get increased sales per outlet and thereby reduce unit selling costs. The increases in sales which your company has procured have been through intensive development within the range of its distribution system and through increasing the output of its equipment. This is illustrated by the results at service stations: during 1929 the number of owned service stations increased less than 7 per cent but the average sales per service station in 1929 were 46.9 per cent greater than in 1928 and 104 per cent greater than in 1927. The increase in output per tank truck has been even greater."

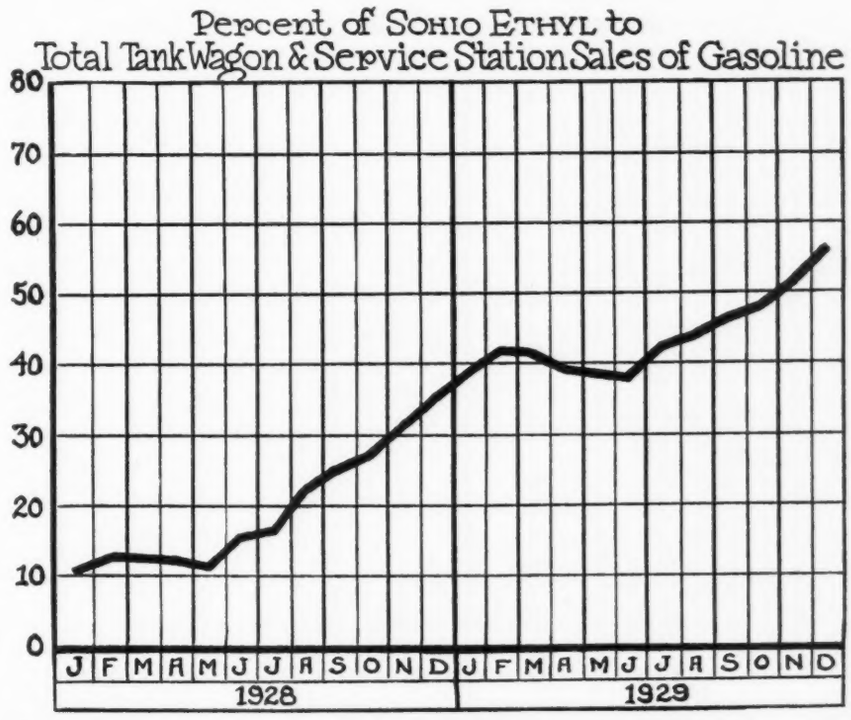
Mr. Holliday wrote this about the company's advertising program, past and future:

"The advertising budget was large in comparison to that of any previous year but seemed necessary to yield a proper maximum profit. Your board of directors feels that the gains in sales for 1929, and especially the increased proportion of sales of premium priced products, could not have been accomplished without the advertising campaign which was conducted throughout the year. The advertising media employed have included newspapers, Ohio magazines, radio, posters, billboards, road maps and miscellaneous pamphlets.

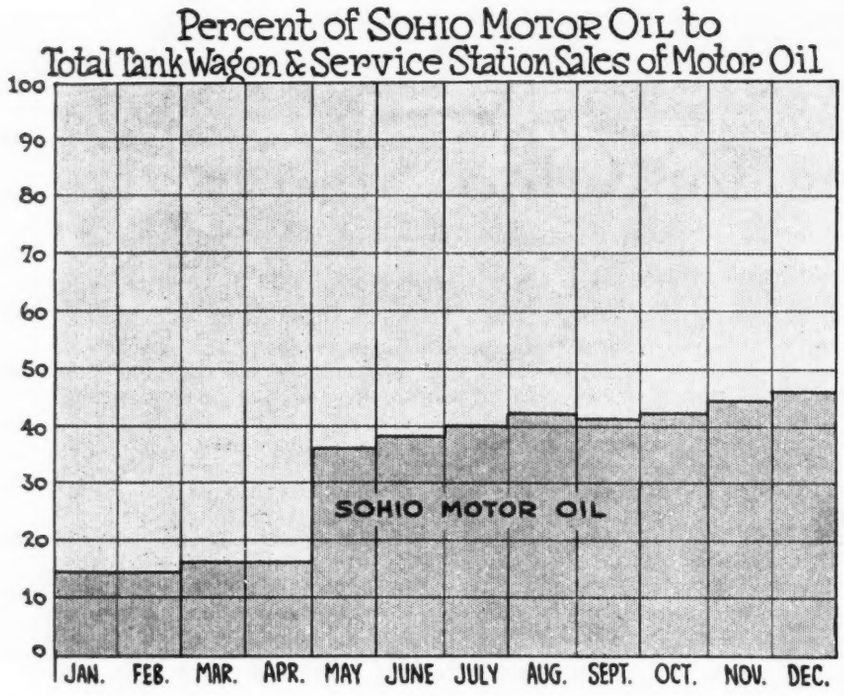
"It is true that advertising, just like price cutting, cannot stimulate materially the total demand for gasoline, and operates fundamentally simply to take business from one company and transfer it to another. By concentrating its advertising, however, upon its premium priced products this company has been able to increase the demand for those products. The advertising expenditures of this company have been economical in increasing the company's profits through premium priced goods far beyond the advertising cost. It is also interesting to note that the advertising has increased the company's total sales, and that the total sales of the ordinary priced gasoline have been substantially increased while the percentage of premium priced sales was mounting.

"Your management feels that it began its policy of advertising just in time. One of the primary purposes of creating consumer demand through trade brands and advertising is to assure continued output through a manufacturing department up to economical production. In the past two years the public has become brand conscious in the matter of gasoline, and it is becoming increasingly difficult to sell an unadvertised brand.

"The effect, and probably instinctive purpose, of this advertising in the gasoline business has been to knit the dealers in with the general



How sales of premium gasoline by the Standard Oil Co. of Ohio increased in relation to total sales



How premium motor oil sales of the Ohio Standard rose when stimulated by a new product and intensive advertising campaign

sales organization of the refining and marketing company. The time is passing when a sale is deemed completed when an order is received from a dealer, and the work of sales departments more and more is tending toward assisting the dealers in the sale of their goods after the purchase. More and more, through advertising, dealers are becoming identified by color, signs, standardization of service, and other devices, exclusively with a particular refining and marketing company, thereby saving the waste which comes from duplication of different companies' pumps with resulting small gallonage per pump.

"The management of your company feels that this company has no option but to continue its vigorous advertising and to back up this advertising with sound and vigorous merchandising, including training and standardization of service throughout its entire sales organization, including its dealers and agents. Advertising can only be effective when continually supported by a high quality of product and service, and aggressive merchandising."

The gain in gross income (sales) of the Standard Oil Co. of Ohio was almost as large as the gain in gallonage or 40 per cent. The 1929 gross was $62,871,089 and the 1928 gross $44,732,829. The gain in net earnings, however, did not keep pace with the gain in gallonage and gross sales as measured in dollars. The 1929 net was $4,202,384 and 1928 net $3,896,548, each after depreciation and federal income taxes, a gain of less than 8 per cent. Here is the way Mr. Holliday explains the difference, a situation that many other companies probably experienced:

"Cost of goods sold, for 1929, which includes all cost of raw materials and finished products purchased for sale, refinery operating expense and depreciation, and overhead chargeable to manufacturing, was $45,984,503.98, or 73.1 per cent of the gross sales, as against 72.2 per cent in 1928. Marketing and general expenses and depreciation on marketing facilities (which item includes all expense except the item of cost of goods sold) amounted in 1929 to $12,546,614.61, which was approximately 20 per cent of the gross sales, as against 19 per cent in 1928.

"The comparison of these operating ratios is a good example of how the mere consideration of profit and loss statements sometimes may be deceiving unless the financial statements are supplemented by further facts and analysis. The cost of goods sold in relation to gross sales was higher in 1929 than in 1928 for two reasons. In the first place, cost per barrel of crude oil was higher in 1929 than in 1928. Had the cost per barrel of crude oil been the same in 1929 as in 1928 the cost of goods sold would have been reduced by $851,662. This would have lowered the cost of goods sold to 71.7 per cent of gross sales, or materially better than in 1928 when the percentage was 72.2 per cent. The other element which entered into the higher cost of goods sold in 1929 was the fact that in the early summer months a serious and wholly unexpected reduction was made in the quantities of crude oil which the company was able to purchase through its regular sources of supply on account of limitations in the pipe line company's capacity. It was impossible to replace this reduction either in sufficient time or without the prohibitive cost of railroad transportation, and hence, in order to meet sales requirements, the company unexpectedly was forced to purchase considerable gasoline in the months of peak consumption at materially higher prices than it would have cost to manufacture, had the crude oil been available. Actual manufacturing cost per gallon of crude was lower in 1929 than in 1928.

"Another ratio of interest is that, heretofore mentioned, of marketing and general expenses and depreciation on marketing facilities to the amount of the gross sales. In 1928 these expenses amounted to $8,494,976.40, which was approximately 19 per cent of the gross sales for that year. In 1929 this figure was $12,546,614.61, which was approximately 20 per cent of the gross sales for 1929.

"This seeming increase in the ratio of marketing and general expense to gross sales, however, must also be interpreted in the light of a special factor. In both years the gross sales figure includes a considerable amount of tank car sales of gasoline on which there is only an insignificant sales expense.

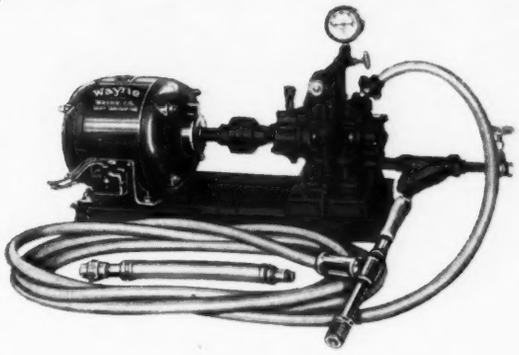
"The company's investment in distribution facilities and its sales personnel are practically all devoted to the sales through service stations and tank trucks. It seems pertinent, therefore, to relate the marketing and general expenses, other than cost of goods sold, to those sales for which such marketing and general expenses primarily were incurred.

"The tank car sales of gasoline in 1928 constituted a considerably greater proportion of the total gross sales than in 1929. In 1928 the tank car sales of gasoline constituted $9,023,923.00, which was 20.2 per cent of the gross sales for that year; in 1929 the tank car sales of gasoline amounted to $10,265,954.00, which was only 16.3 per cent of the total gross sales for that year. In 1928, therefore, the gross sales, other than tank car sales of gasoline, amounted to $35,708,902.15, whereas for 1929 that figure was $52,605,135.21. Relating the marketing and general expense figures to these amounts gives a percentage of approximately 23.8 per cent for both 1928 and 1929. In other words, as a percentage of the sales for which the marketing and general expense really was incurred the ratio for 1929 was no greater than for 1928.

"Even so, the marked increase in marketing and general expense in 1929 over 1928 calls for some explanation. The increase primarily is due to the company's change to an entirely different level of sales activities than prevailed up to about the middle of 1928, when the pro-

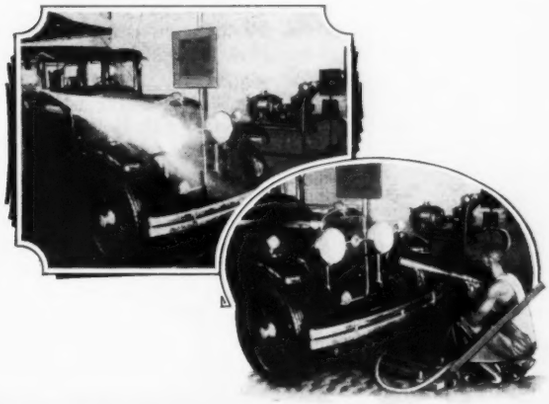
DEPENDABLE ALWAYS

-that's Wayne



Any Service Station, Auto Laundry or Garage where out-of-date washing methods are employed is ignoring the greatly increased profits which could easily be theirs.

Wayne's rotary type car washer does the job easier, quicker and better and is equipped with either one, two, three or four nozzles. The rotors are enclosed in a bronze housing which will greatly outwear cast iron and also eliminates rust. Send for literature and prices.

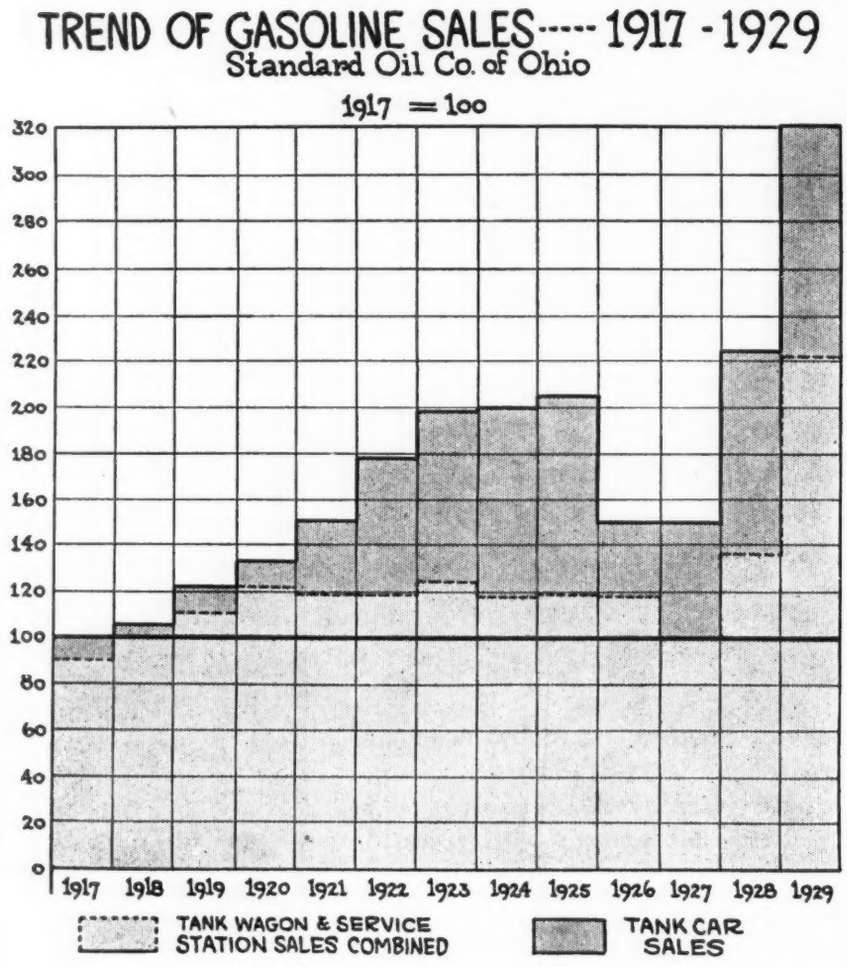


WAYNE COMPANY

FORT WAYNE, INDIANA

Atlantic Area
FRY EQUIPMENT CORP. DIVISION
Rochester, Pennsylvania

Pacific Area
THE BOYLE-DAYTON DIVISION
Los Angeles, California



The way Standard of Ohio gasoline sales have increased under management of W. T. Holliday

gram of the present management became operative. With the rapidly declining sales in the first part of 1928 the expenses had been very substantially reduced by drastic reduction in personnel, laying up of equipment and other similar measures. To accomplish a very rapid increase in sales in the last half of 1928 and in the year 1929, a marked increase in personnel and in all other items of expense had to be made. Much of the increase in general expense therefore must be considered as that necessarily incident to a pioneering and developmental period. The percentage of increase in general expense, however, has not been nearly so great as the percentage of increase in the sales which resulted.

"A comparison between 1929 and 1927 would be more enlightening. The total marketing payroll in 1929, for example, was approximately 53 per cent above that of 1927, whereas the tank wagon and service station gallonage sales of gasoline resulting from that payroll expense in 1929 were 120 per cent greater than in 1927. Total sales expense per gallon of products sold through service stations and tank wagons was substantially lower in 1929 than in 1928 or 1927.

"The consolidated net profit for 1929, before deduction of income tax, was approximately 7.5 per cent of gross sales for the year as against 9.6 per cent for 1928. This reduction of approximately 2.1 per cent is accounted for by the foregoing explanation as to increase in percentage of cost of goods sold and of marketing and general expense, and also by the fact that tank car sales in 1929 were made at a substantially lower price level than in 1928."

Sales by tank wagons and service stations cost less per unit than in 1928, Mr. Holliday reported. Considerable saving was made by allocating tank car shipments to nearby sources of supply, and by modernization of its motor fleet. The company is perhaps the largest present user of light semi-trailer tank units, having upwards of 150 jobs in its service. These jobs have 750, 1000 and 2000-gallon tanks.

Mr. Holliday reported these sales economies:

"It was stated in the annual report for 1928 that the company's freight and transportation cost per gallon had been reduced in the last half of that year by about ½ cent per gallon and that further freight savings could be hoped for in 1929 when the new refinery at Latonia, located within the switching limits of Cincinnati, had been completed. That refinery started operations in June, 1929. Also during the year 1929 the company extended considerably the trucking of gasoline from refineries in substitution for rail haul. In addition to this, freight hauls were reduced by the trading of gasoline on a specification basis with other refining companies. As a result of these various economies the freight and transportation cost per gallon was reduced in 1929 about ¼-cent per gallon.

"At the middle of 1928 the company's motor truck equipment was antiquated, and the present management began replacing the same with modern, fast moving trucks. This was continued extensively in 1929, the company having expended in that year over $600,000 for such truck equipment. The effect of this has been not only to replace old trucks with a smaller number of new trucks, but to increase very substantially the gallonage per truck.

"In addition to the economies of transportation, it was possible as a result of the use of these new trucks to close and abandon about 38 of the company's bulk stations, or about 10 per cent of the total. The tankage at these stations in most instances was moved to other stations where it was needed, thus saving considerable capital expenditures. No business has been lost as a result of this elimination, and material savings in expense have resulted. It is contemplated that during the coming year an equal number of bulk stations will be closed through continuance of the modernization of our truck fleet.

"As a result of economies and increased sales our selling cost of all products sold through service stations and tank wagons (without attributing any of the sales expense to tank car sales) was 0.22 per cent per gallon lower in 1929 than in 1928, and 0.92 per cent per gallon lower than in 1927."

Cities Service Has Budget Book

NEW YORK.—A comprehensive 62-page personal budget book for 1930 has been put out by the Cities Service Oil Co., in an effort to instill the idea of thrift and investment into the minds of users.

This book has space for daily items of expense for every day of the year from carfare to gasoline and lodge dues. It tells how the book is to be used, how to plan the spending of your money and balance estimates.

A part of the book is devoted to advertising Cities Service petroleum products and the Doherty investment plan. A copy of the book will be mailed to any one free of charge by writing the company at 60 Wall St., New York.

ADVERTISING PAGES REMOVED

Pure Oil Turns to Glass Bottles In Merchandising Motor Oil

CHICAGO

PURE OIL CO., observing the trend toward packaging manufactured goods for retailing, is experimenting with the bottling of its Tiolene motor oils in part of its marketing territory. If results of the experiment warrant this method of merchandising its Tiolene oil will be extended to all its sales outlets.

Marketing executives of the company have been watching carefully the trend of merchandising in other industries, they have informed NATIONAL PETROLEUM NEWS. They have seen the passing of the old fashioned cracker barrel and the appearance of shelf upon shelf of dirt-free, moisture-proof packages. They have witnessed the passing of the sugar barrel and the coming of packaged sugar, each package filled, weighed and sealed at the refinery before distribution to retail stores.

They also have watched the marketing of milk, beverages, preserves and other products in glass containers. As a result of these observations they decided on the experiment of bottling their premium motor oil, the first major oil company to undertake such a method of merchandising.

Under the new method Pure Oil bottles and seals its Tiolene oil, which is made of Cabin Creek crude oil, a premium Pennsylvania grade crude, at a few of its distributing centers. Every bottle is filled at a company owned plant and sealed before it is distributed to its own or dealer sales outlets. Buyers are thus assured genuine and clean oil.

Buyers are assured a full quart in every bottle and an effective sales argument is to caution the buyer not to accept bottled Tiolene if the seal has been tampered with or broken. The cap seal is made unfit for second use when the bottle is opened and station salesmen are instructed to open bottles only in the presence of the customer.

The bottles are 18 inches long and 2¾ inches outside diameter. They are of a special design which is controlled by Pure Oil Co.

Bottling is done with a machine which fills 16 bottles at one time. The bottles are in a pressed steel crate in which they are later to be delivered to the retail outlets. Capping is done by hand operated machine, which method has been found more economical.

The crates of bottled oil are delivered on the can racks of the gasoline trucks. Eight crates can be placed on the side of the size of truck used in hauling to service stations. That is 16 crates to a load or 64 gallons of motor oil.

At the service stations the bottles are put into special display racks or into special baskets similar to those used for the usual type of bottle which is refilled at the service station from bulk storage.

When emptied the bottles are returned to the crate for return to the bottling plant. At the plants the bottles are drained of the oil which has adhered to the sides, washed, dried and refilled.

The oil which clings to the sides of the bottles is compensated for by putting into each bottle a little more oil than a quart. Experiment has shown just how much addition must be made.

Drainings from returned bottles are used in the company's own automotive equipment so there is no wastage.

Sealed containers assure the customer that he is getting pure, clean, genuine oil. The grade of oil is imprinted on the cap.

The cap seal used by Pure Oil, on which the grade of oil the bottle contains is imprinted

The bottle used by Pure Oil Co. in which to merchandise its Pennsylvania grade motor oil. The bottle is 18 inches tall and 2¾ inches outside diameter

An Oil Jobber *Should Jump At This!*

FREEDOM offers you a 100% Pennsylvania motor oil that can be supplied to your trade with your own brand name.

More than 700 jobbers throughout the country are receiving regular shipments under this plan. And it pays them handsomely too. It enables them to market a high-quality product at a wider margin of profit.

If you have your own specifications we'll make up (Sharples Process) a motor oil that exactly meets them. Or we'll be glad to recommend one of our own tested specifications.

Shipments are made whenever you want them in tank cars, compartment tank cars or drums. Full information is yours for the asking.

THE FREEDOM OIL WORKS CO.
Refineries at FREEDOM and CORAOPOLIS, PA.

Also available for immediate shipment

85/90 Viscosity Bright Stock
100% Pennsylvania Neutrals
600 Steam Refined
650 Steam Refined
600 Flash Steam Refined
Freedom Filtered Kerosene Oil

FREEDOM

100% PENNSYLVANIA OILS

FO-502

Oil Trademarks For Copyright

The following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C. trade-mark specialists.

As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

"BARRETT," etc. Ser. No. 285,062. The Barrett Company, New York, N. Y. For motor-fuel oils.

Picture of two candles with a modernistic background. Ser. No. 292,129.

Standard Oil Company of New York, New York. For petroleum and products of petroleum.

"BLUE MOON," in circle. Ser. No. 292,428. Waverly Oil Works Company, Pittsburgh, Pa. For gasoline.

"REPECO" R, etc. Ser. No. 289,322. Reserve Petroleum Company, Tulsa, Okla. For illuminating oils, lubricating oils, greases, gasoline, naphtha, kerosene, motor-fuel oil, furnace-fuel oil and crude oil.

"CARTER'S," in rectangle figure. Ser. No. 291,436. Chas. C. Carter, doing business as Pennsylvania Lubricants Company, Los Angeles, Calif. For lubricating oils and greases.

"FIRESTONE." Ser. No. 291,721. The Firestone Tire and Rubber Co., Akron, Ohio. For gasoline and lubricating oil and grease.

"WHIRL." Ser. No. 292,043. Niagara Lubricant Company, Inc., Buffalo, N. Y. For lubricating grease.

Trade-mark consists in wide band encircling an oil drum or tank midway of its length, such band being colored green, while the remaining portions of the drum or tank are of cream color.

Ser. No. 290,662. Pierce Petroleum Corporation, Wilmington, Del., and St. Louis, Mo. For lubricating oils.

"ANCHOR BRAND." Ser. No. 291,126. Jenkin-Guerin Oil Company, St. Louis, Mo. For lubricating oils, greases and compounds.

"STA-VOL-ENE." Ser. No. 293,179. Hanlon-Buchanan, Incorporated, Tulsa, Okla. For gasoline.

"OLD GUARD," and silhouette of man with gun. Ser. No. 293,338. Motol, Inc., New York, N. Y. For lubricating oils and greases, gasoline, gas oil, and kerosene.

"AEROPLANE, D. O. CO.," representation of a star in a circle. Ser. No. 288,468. The Derby Oil Company, Wichita, Kans. For motor fuels—namely, gasoline and gasoline compounds.

Fanciful representation of an eagle. Ser. No. 293,389. United States Refining Co., Los Angeles, Calif. For oils and greases or petroleum products consisting of gasoline, motor-fuel oils, lubricating oils and greases.

"PETROBENZOL." Ser. No. 291,422. Anderson-Prichard Oil Corp., Oklahoma City, Okla. For petroleum by-product.

"HILL TOP." Ser. No. 293,371. Jackson Oil Company, Inc., New Orleans, La. For lubricating oil and greases.

"WALTEX," and the letter W in a circle. Ser. No. 285,488. Emile H. Walter, New Orleans, La. For gasoline, lubricating oils and greases and motor and furnace fuel oils.

"HUNDRED PER CENT," on a shield of cream color and red. Ser. No. 287,874. Imperial Refining Co., Tulsa, Okla. For gasoline and lubricating oils.

"HUNDRED PER CENT." Ser. No. 287,875. Imperial Refining Co., Tulsa, Okla. For gasoline and lubricating oils.

Employes Operate Bulk Plant, Save Cost of Extra Man

ELGIN, Ill.

TRUCK drivers and workmen from a nearby service station constitute the gasoline bulk plant crew at Herman Bunge's plant in Elgin, thus eliminating the expense of a full time bulk plant employee.

Truck drivers are responsible for filling their own trucks. Tank cars are unloaded by employees from a service station. The movement of gasoline through the plant is checked with an inventory each month and by checking all truck drivers' reports.

Several employees at the station are capable of unloading tank cars. The job is assigned to several men as protection in case an employee should leave the company so it would not be necessary to have a new man do the work.

Another feature of the plant is a set of return lines on the overhead truck loading tanks to prevent an overflow. In case the pump is running after the tank is full the gasoline returns to the underground tank and is recirculated.

The plant was built about five years ago by the late Herman Bunge. His estate now operates the company, headed by Arthur Bunge, a nephew.

There are six 15,000-gallon storage tanks buried at the plant. These tanks were surrounded by a concrete wall a foot thick, and gravel was used for filling in. Above ground there are four 1375-gallon tanks for gravity loading of trucks.

Tank cars are unloaded by gravity or through an overhead line. The pump house is equipped with a double rotary pump. Lines throughout the plant are 2-inch.

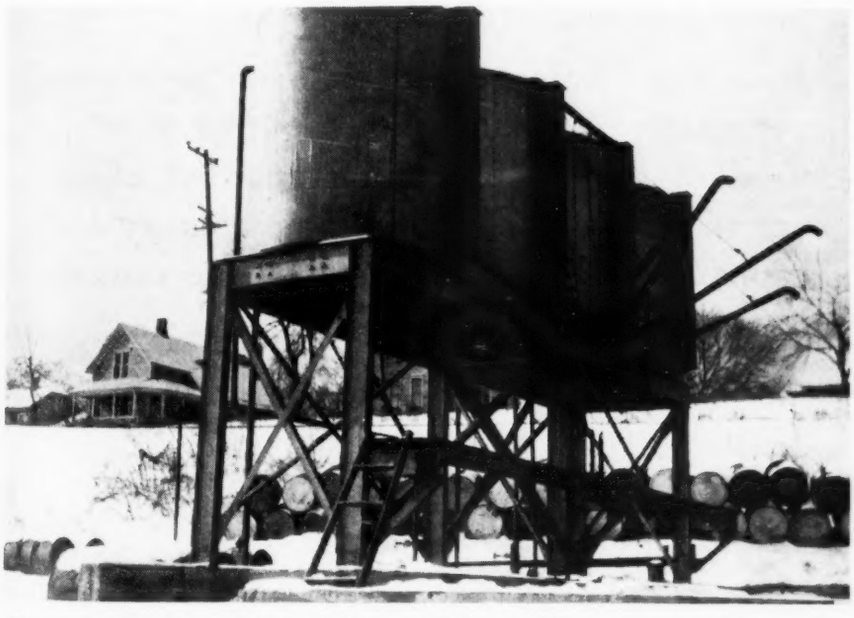
Two of the underground tanks have direct return line connections to two above ground tanks. Of the four other underground tanks there are two pairs each pair connected to one of the above ground tanks. Both of these tanks with the double underground connections are so piped that the return line empties into the tank from which gasoline is being pumped.

The plant at Elgin has the kerosene and burner oil storage at a nearby service station. Oil is purchased in drums. The Elgin plant serves six service stations and country tank truck routes.

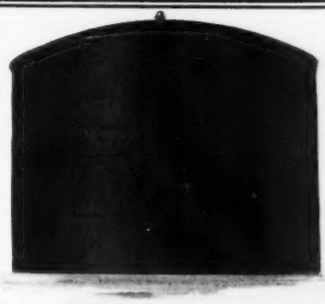
Advertises With Puzzles

ONLEY, Va., April 1.—An ingenious bit of advertising has been put out by H. C. Watson, oil marketer here, in the shape of five small odd-shaped pieces of red cardboard which, when properly placed together, will form a perfect cross. Each piece carries on it a few words of advertising on Texaco gasoline and motor oil which must be read time and again before the puzzle is solved.

These are handed out in small sealed envelopes to customers at Mr. Watson's service stations.



Storage tanks from which gasoline is fed by gravity to trucks. These tanks have return lines to underground storage to prevent overflowing, when the tanks have been filled

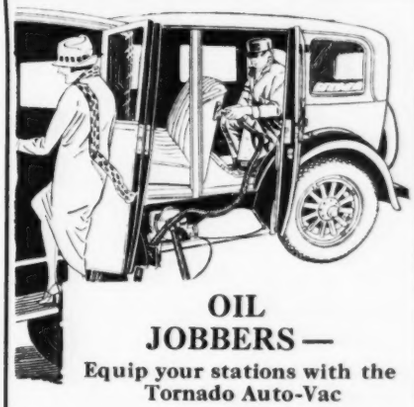


Buy your field-erected marketing tanks now

Be prepared for summer business with adequate marketing tanks. Flat bottom, field erected tanks are made in sizes small enough to afford variety of storage, yet large enough for low cost per barrel of capacity. We will be glad to quote you on field erected tanks from 25,000 gallons up. Also on riveted up cylindrical tanks for fabrication at our Birmingham plant.

Chicago Bridge & Iron Works

Cleveland - - - 2206 Union Trust Bldg.
New York - - - 3145 Hudson Terminal
Philadelphia - - - 1614 Jefferson Bldg.
Boston - - 1516 Consolidated Gas Bldg.
Chicago - - - - 2125 Old Colony Bldg.
Detroit - - - - - - 1513 Lafayette Bldg.
Birmingham - - - 1534 50th Street, N.
Dallas - - - - - - 3339 Magnolia Bldg.
Atlanta - - - - - - - 1050 Healey Bldg.
San Francisco - - - - 1060 Rialto Bldg.
Havana, Cuba - - - - - Apartado 2507

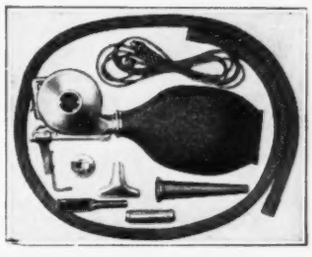


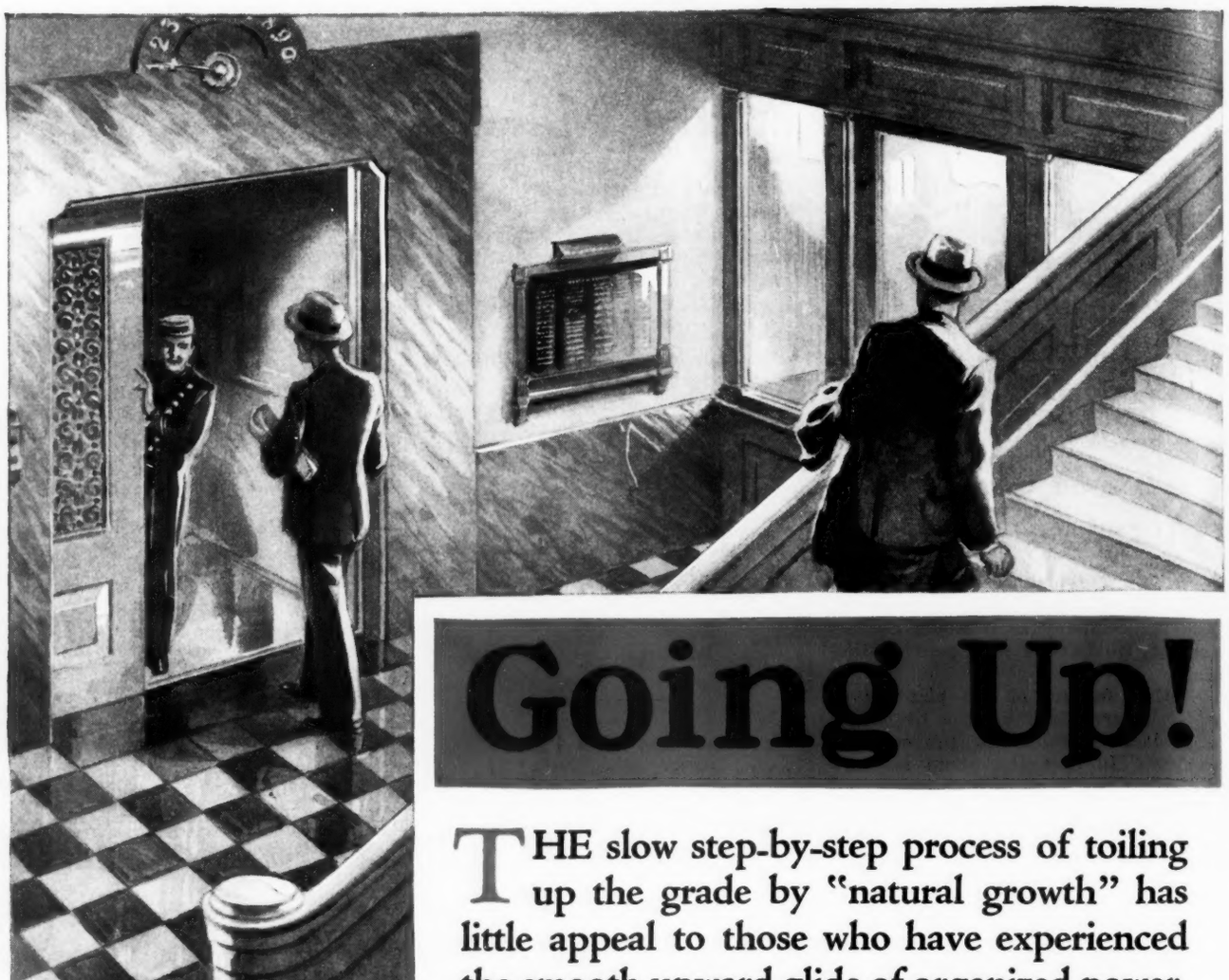
OIL JOBBERS—

Equip your stations with the Tornado Auto-Vac

Give your customers a 100 per cent vacuum cleaning job with the new TORNADO Auto-Vac Cleaner—the most powerful and efficient commercial auto cleaning device ever built. Hundreds of oil jobbers have standardized on the TORNADO — stimulates sales! Attach this advertisement to your letterhead and mail for special offer to oil jobbers. No obligation.

Breuer Electric Mfg. Co.
860 Blackhawk St., Chicago, Ill.





Going Up!

THE slow step-by-step process of toiling up the grade by "natural growth" has little appeal to those who have experienced the smooth upward glide of organized power.

That is what is offered you today in the carefully shaped and successfully proved Wadhams Operation Plan.

It is the "power" method for ambitious petroleum retailers and distributors who are tired of the limitations of unaided effort, yet wish to preserve their own identity and capitalize their local prestige to the utmost.

Wadhams with ETHYL (TRADE MARK) REG. U.S. PAT. OFF. BRAND OF ANTI KNOCK COMPOUND ETHYL GASOLINE CORPORATION NEW YORK, U.S.A.

Refinery and ETHYL Mixing Plant

More and more of the far-sighted are seeing special advantages in the Wadhams Ethyl franchise. *Ask Wadhams today.*

If "Going Up" is foremost in your mind, write a letter to Wadhams today.

Wadhams of Wisconsin

51st Year

Established 1879

General Offices *Milwaukee*

East Chicago, Indiana . . . . . Tulsa Office, *Philcade Bldg.* . . . . . Chicago Branch, *624 S. Michigan Avenue*

Automotive Transportation Items

THE central automotive transportation group of the American Petroleum Institute will meet at Tulsa May 5 and 6 for a discussion of oil company motor transport problems. One day of the meeting will be given over to a program dealing with marketing vehicle operation. The other will be devoted to the maintenance and operation of vehicles used by the producing division of our industry.

The central group draws its members from states west of the Mississippi river and east of Colorado. R. F. Fike, superintendent of automotive transportation for the Mid-Continent Petroleum Corp., is chairman of the central group. Recently he succeeded Frank Jones of the Shell Petroleum Corp., who headed the group last year. C. H. McBurney of the Transcontinental Oil Co., Tulsa, is vice chairman of the group.

* * *

THE Consumers Oil Co., Flint, Mich., lubricates, washes, and does minor repair jobs on its fleet of three trucks, but major repair work is done by a local garage man who buys his petroleum products from the company. The company has two tank trucks and a stake truck.

Drivers are responsible for keeping the trucks clean and doing the minor repair jobs. Parts are not stocked, but purchased at the garage as needed. The warehouse man is responsible for keeping the trucks lubricated.

* * *

THE first one of the big six-wheel, six-cylinder motor tank trucks to be turned out in regular production by the Autocar Co. here, was sold in February to the Standard Oil Co. of Pennsylvania, Philadelphia.

The truck has a five compartment tank of 2622 gallon capacity; has pneumatic tires, 40 by 8; drives through all four rear wheels; and a 198-inch wheelbase.

One of the advantages of this truck, the manufacturer states, is its ease of handling, it being able to back into narrow alleys to make deliveries. The motor is 101 horsepower and it can move full load at legal highway speed.

* * *

TRUCK drivers of the Pinncale Oil Co. at Gaylord, Mich., regularly supply the company with information about the equipment of customers which uses petroleum products. Automobiles, tractors and farm and household machinery are listed. For regular customers a complete file is kept while less complete information is compiled regarding non-customers.

The truck drivers also call on every farmer on their route, whether a customer or not. In the case of a farmer well sold on a competitor's goods the driver does not stop every trip, but where there is the slightest possibility of obtaining a new customer the driver calls every time he passes the house.

J. N. Hale is president of the company and A. M. Wattson is assistant manager.

Two chief engineers of truck manufacturing companies face the camera. A. F. Masury, the Mack Truck Co., and C. D. Church, the White Co., look over specifications of truck tractors that competed in the March 18 hill climbing tests at Gates Mill, O.

AFTER operating a Republic 2½-ton truck 18,000 miles, the Pinncale Oil Co., at Gaylord, Mich., sent it to the factory for overhauling and a paint job. The company has a Chevrolet tank truck, with a 365-gallon tank, and trades its light truck in about every 20,000 miles.

The trucks are lubricated and washed at the bulk plant, while repair jobs are turned over to some garage handling the company's gasoline and oils. The company figured it was more economical to have the larger truck overhauled at the factory, and to keep trading in on the lighter truck.

* * *

STANDARD Oil Co. of New Jersey, is asking its employees in the marketing division to sign pledges that they will operate their motor vehicles more carefully this year. The company believes that by the mere act of reading and signing the pledge the employee will give some thought to safety and inevitably will recall the pledge many times when he gets behind the wheel of a company or his own car or truck.

Recently 1462 pledges were sent to the company's home offices by employees of the Newark branch. Every employee in the branch who drives a car had signed.

A six-wheel truck with five-compartment tank having capacity of 2622 gallons, owned by the Standard Oil Co. of Pennsylvania and made by The Autocar Co.

OTTAWA LIFTS

Supplied in either Free-Wheel or Drive-On Types

Build Business Increase Profits

One of OTTAWA'S Four Models Is the New Low-Priced LIFT ONLY

$250.00

F.O.B. OTTAWA

Either Free-Wheel or Drive-On Type. Handles all passenger cars and many of the trucks.

OTTAWA LIFTS, backed by 30 years of successful machinery manufacture, meet the needs of station owners everywhere—providing super lifts for super greasing service—increasing business. *Without exception*, every OTTAWA LIFT installed has quickly paid for itself, rendering speedier service and increasing profits!

OIL SUPPORTED for ease and economy of operation—HYDRAULIC for maximum safety and efficient dependability under any conditions—ROTATING for accessibility and working convenience—OTTAWA LIFTS incorporate every modern improvement.

OTTAWA LIFTS operate from ordinary air compressor—no extra equipment necessary. Only one moving part—nothing to wear out or go wrong.

Write today for full particulars—also prices of Ottawa Visible Gasoline Pumps, Air Towers and Air Compressors.

OTTAWA MANUFACTURING CO.

"Machinery Builders for 30 Years"

232 Fuller Street **Ottawa, Kansas**

Advertising Manager Wanted

We want a man with experience in the preparation of advertising layout and copy, a thorough grasp of sales promotion, and a fundamental working knowledge of petroleum marketing. Substantial starting salary and brilliant future for the man who can qualify. Give full details in first letter. Replies strictly confidential.

Address Box 516, National Petroleum News

New Stations Building

Note: Material used in this column is principally taken from the newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Lawrence, Kans.—L. L. Riling, filling station.
Holdenville, Okla.—Independent Oil & Gas Co., service station.
Minneapolis, Minn.—Shell Petroleum Corp., service station.
Minneapolis, Minn.—M. R. Waters & Sons, service station.
Lincoln, Nebr.—R. H. Swallow & C. W. Young, filling station.
Duncan, Okla.—The Texas Co., filling station.
Chillicothe, Mo.—One-Stop Super Service Station Co., service station.
DeWitt, Ia.—B. B. Herr, service station.
Batavia, Ia.—Farmers' Union, filling station.
Le Mars, Ia.—Co-op. Oil Co., filling station.
Decorah, Ia.—Herbert Vangsness, filling station.
Waukesha, Wis.—Valley Oil Co., service station.
Humboldt, Ia.—Co-op. Oil Co., filling station.
Norway, Ia.—Eldred Thomas, filling station.
Sioux Falls, S. D.—Penn Soo Oil Co., filling station.
Toledo, Ia.—Shell Petroleum Corp., filling station.
Minneapolis, Minn.—Shell Petroleum Corp., filling station.
Minneapolis, Minn.—A. C. Ayers, filling station.
Wessington Springs, S. D.—Curtis Reedy, filling station.
Canon City, Colo.—Hunter Palmer, service station.
Winona, Minn.—Shell Petroleum Corp., service station.
Manhattan, Kans.—Sinclair Refining Co., filling station.
Shenandoah, Ia.—Walker-Grow Oil Co., Inc., filling station.
Jonesboro, Ark.—Phillips Petroleum Co., filling station.
Perryville, Mo.—Phillips Petroleum Co., filling station.
Ozark, Mo.—Johnson Motor Co., filling station.
Waupaca, Wis.—Shell Petroleum Corp., filling station.
Minneapolis, Minn.—O. E. Frisk, filling station.
St. Paul, Minn.—H. H. Fletcher, filling station.
Minneapolis, Minn.—Philip Flatt, filling station.
Wadena, Minn.—E. J. Baehr, filling station.
Cameron, Tex.—Gulf Refining Co., service station.
Wellington, Kans.—Shell Petroleum Corp., bulk station.
Fordville, N. D.—Tri-County Oil Co., bulk station.
Eagle Lake, Tex.—L. D. Allen, filling station.
Marshall, Tex.—Gulf Refining Co., filling stations.
Little Rock, Ark.—Barnsdall Refining Co., filling station.
Ottawa, Kans.—Shell Petroleum Corp., service station.
Cape Girardeau, Mo.—Phillips Petroleum Co., filling station.
Minot, N. D.—J. Willis, filling station.
Park Rapids, Minn.—Baehr Oil Co., filling and bulk stations.
Pratt, Kans.—The Texas Co., filling station.
Columbia, Mo.—Shell Petroleum Co., filling station.
Glasgow, Mont.—Mattson Bros., service station.
Grand Junction, Ia.—Standard Oil Co., service station.
Rockwell City, Ia.—Royal Super Service Co., filling station.
Rockwell City, Ia.—A. B. Willis, service station.
Webster City, Ia.—H. L. Hoffman, service station.
Neenah, Wis.—Cities Service Oil Co., filling station.
Merrill, Wis.—Winona Oil Co., service station.
Wisconsin Rapids, Wis.—L. L. Felker & Co., filling station.
Cincinnati, O.—Refiners Oil Co., distributing station.
Columbus, O.—Miller-Riley Oil Co., service station.
New Lexington, O.—James McCune, service station.

Motor Fuel Volatility Increases Survey Shows

CLEVELAND, April 10

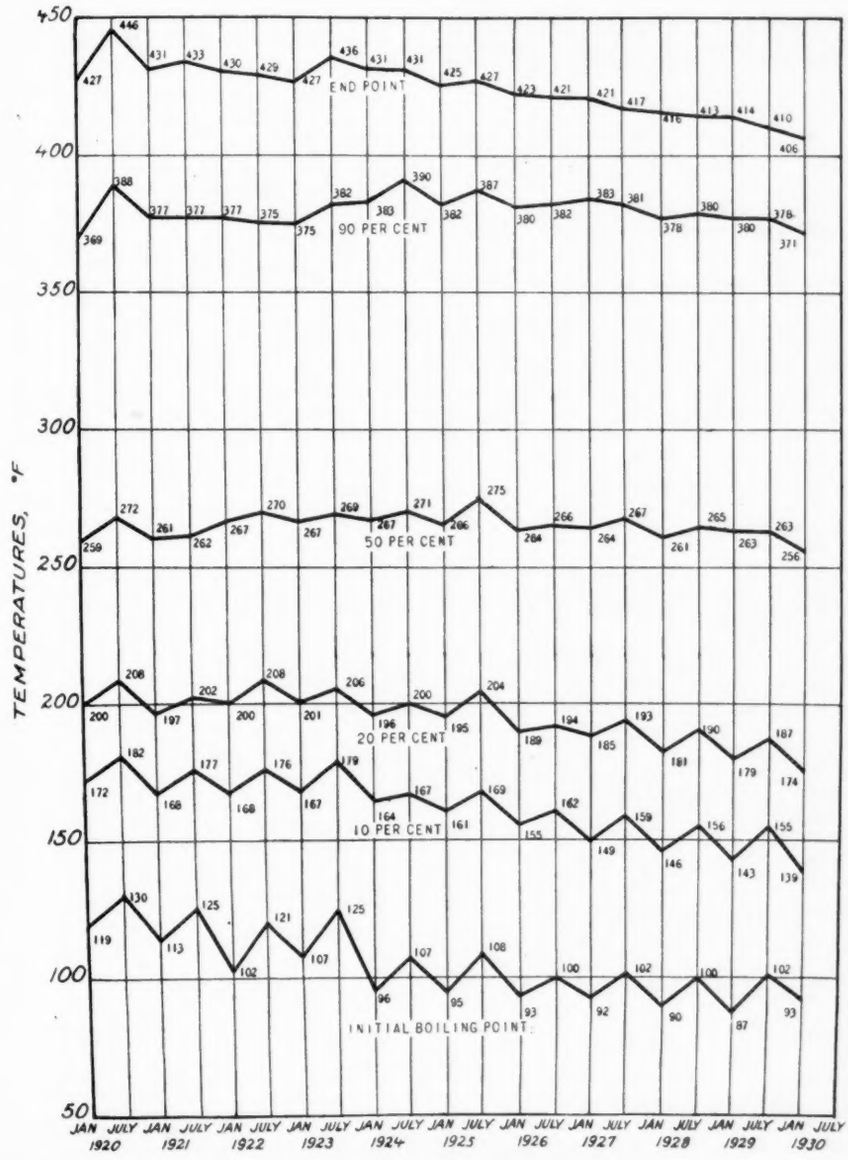
A MARKED increase in the volatility of motor gasolines sold in the U. S. is shown by the semi-annual survey conducted by the Bureau of Mines last January. A report of the survey has just been issued by the bureau in "Report of Investigations No. 2995."

For its 21st survey the bureau gathered 158 samples from retail stations in 12 cities located in various parts of the country.

The average end point of all gasolines surveyed was 406 F. as compared with 410 F. last July and 414 F. in Jan. 1929. The average 90 per cent point on the A.S.T.M. distillation curve was 371 F. as compared with 378 F. last July and 380 F. a year ago. The 50 per cent point dropped 3 degrees to 256 F. as compared with the last two surveys.

The average 20 per cent point on the distillation curve was 174 F. as compared with 179 F. a year ago and 187 F. in July. The 10 per cent point dropped to 139 F. from 155 in July and 143 F. in Jan. 1929.

While refiners have been making their gasoline more volatile by lowering the 10 and 20 per cent points to give better starting qualities they have not been lowering the initial boiling point of their motor fuels correspondingly. Better stabilization



Ranges of average distillation temperatures

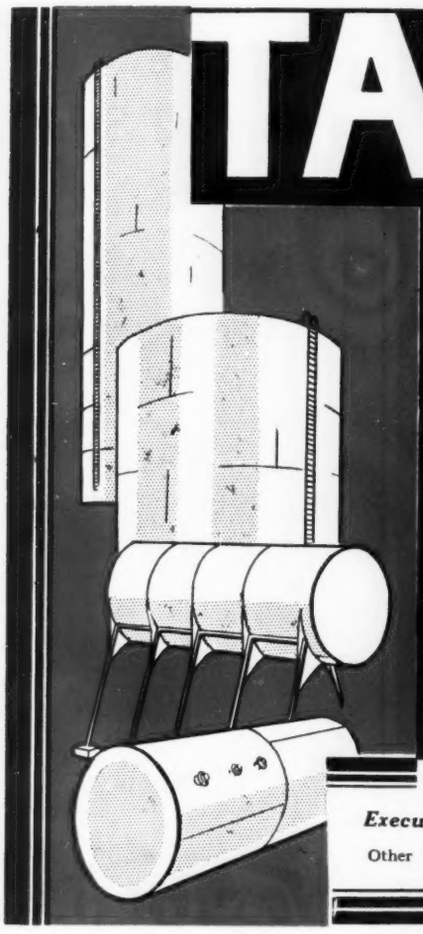
The Preferred Sign of the Petroleum Industry

Veribrite
REG. U. S. PAT. OFF.
PORCELAIN
SIGNS

Booklet
Specification Blank
on request

General Porcelain
Enameling & Manufacturing Co.
4105 West Parker Ave. - - - Chicago, Ill.

TANKS



You want perfect tanks, reasonable prices, and prompt delivery. The reason "Birtanks" are the favorites for any oil or gas storage is because they fit your requirements.

First, the most modern machinery and careful supervision produce Birtanks. The quality is there. Second, location, efficient shop, latest methods, make a fair price. Third, stocks, large production facilities for any special design, central situation on many railroad lines, insure delivery.

Birtanks fit every need of the oil trade. Let us quote.

BIRMINGHAM TANK CO.

Executive Offices—Plants Birmingham, Ala.

Other Offices: New York, New Orleans, Tampa, Atlanta Jackson, Miss.

PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes
For Domestic or Export

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
CYLINDER STOCKS
UNFILTERED AND FILTERED
BRIGHT STOCKS
COLD SETTLED AND CENTRIFUGED
PALE — RED OILS
WAX — PETROLATUM
TECHNICAL WHITE OILS
WHITE MINERAL OILS

For 35 years of reliability, service and integrity— this Company enjoys an International Reputation

JAMES B. BERRY SONS' CO., INC.
General Office—Oil City, Pa.

District Offices at
New York, Philadelphia, Boston, Chicago
London — Hamburg

Cable Address—JASBER Oil City *All Codes*

of natural gasoline used in blending and fractionation of refinery gasoline to remove dissolved gases have resulted in a small increase in the initial boiling point while the 10 and 20 per cent points have been lowered.

The average initial boiling point of all gasolines tested by the bureau in January was 93 F. A year ago the average initial was 87 F. In Jan. 1928 the average was 90 F. and in Jan. 1927 the average was 92 F. At that time the 10 per cent point was 10 degrees above what it was this year and the 20 per cent point was 11 degrees above this year's average.

The average gravity of all gasolines tested was 59.5 A.P.I. as compared with 58.2 in 1929 and 57.9 in 1928. The recovery increased from 96.1 per cent in Jan. 1929 to 96.6 per cent last January as a further index of the greater freedom of motor fuel from dissolved gases.

Tells of Development of Service Stations

CLEVELAND, April 11.—The development of the service station, from the day when the grocer sold gasoline to the customer through a bucket and funnel, up to the modern super service station where motorists buy not only gasoline, but motor oil, greasing work, car washing and many other services incidental to the upkeep of an automobile, is told by C. A. Petersen in the March edition of "The Pure Oil News," company house organ.

Mr. Petersen points out that there are today 125,000 drive-in service stations in the United States, representing an investment of over $1,000,000,000 exclusive of land; that these stations are built in many individual styles from replicas of log cabins to Grant's Tomb.

The Pure Oil Co. built two greasing stations, or what it calls lubridomes, more as an experiment in 1928. These proved so successful that in 1929 it built 29. These are in English cottage design, with blue tile roof and white walls. Interior walls of the buildings are lined with glazed tile, which are attractive and easy to keep clean. Each lubridome, outside of regular greasing equipment, tire and battery service, is equipped with men's and ladies' rest rooms and a spacious waiting room.

RICHMOND, Va., April 10.—Following the purchase of the Penn Oil Co. in Washington by the American Oil Co., the latter has purchased the marketing properties of the C. D. Jenkins Oil Co., in Richmond. These include four service stations and one bulk plant, all in Richmond.

C. D. Jenkins, owner of the company, remains as Richmond manager.

Home-Made Device Tells Station Man Customer Has Come

CINCINNATI

AN AUTOMATIC call system which may be used at service stations where the operators may have other duties than just selling gasoline, was worked out at the Hyde Park station of Elliott Melvin & Bros.

The Melvin station is a suburban one-stop station with only one or two men working at it most of the day. It has lubrication pits in the rear, out of sight of the pumps, and a tire and battery room from which the operator may see a car that drives into the station but may not notice it if he is busy and the car enters the station quietly.

Knowing that gasoline buyers are more or less impatient and will not leave their cars to call a salesman—which is a bad system at its best—one of the Melvin brothers devised a simple system which works without the motorist realizing that he has summoned the station attendant.

A shallow groove was cut across the two concrete drives at the Melvin station and a 25-foot length of ¾-inch garden hose was placed in the groove.

One end of the hose was run to a metal box at one side of the drives and attached to a small cylinder of brass tubing. A plunger made of a can head was fitted into the cylinder and a wire from a six-volt automobile battery was connected with the plunger system.

An electrical contact was placed at the top of the cylinder and this also was wired to the battery. A vibrator-type automobile horn was placed in the circuit in the rear of the workshop.

The hose was filled with water and the free end plugged. In winter a solution of alcohol and water is used.

Whenever a car drives over the hose there is an impact sufficient to drive enough liquid into the cylinder to cause the electric circuit to close and the horn give one sharp toot. If the wheels of the car come to rest on the hose there is enough "give" in the system to break the circuit and stop the horn.

The vibrator horn is used because it is more responsive than a motor-type horn to a momentary closing of the electrical circuit. The battery is a used one and one charging is sufficient to last months as the draft on it is very small.

It is necessary to replace the hose only about once a year.

Real Service Wins Approval of British Speed 'Champ'

REAL service in an American service station won the respect of a British speed champion when his rear main bearing burned out.

Kaye Don, British speed champion, was bowling over the highway from Palm Beach to Daytona Beach, Fla., recently in a popular American built auto, when the rear main bearing let go as he was coming to a "little two-by-four petrol station."

When he inquired for a garage the British champion was informed by the attendant that the car could be repaired right there. The attendant jacked up the front end, took off the pan, and soon was on his way to a nearby shop having a babbitting machine.

The whole job delayed the champion about five hours and the charge was less than $20. The speed champion remarked that in merry England he would have been charged much more, and been held up two days.

Imperial Helps Farmers To Kill Weeds

CLEVELAND, April 10.—In an effort to be of practical assistance to the farmers of Canada, the Imperial Oil Ltd., Toronto, is publishing this spring a book entitled "Weed Control."

This book contains information given by those who have been successful in warring on the many destructive weeds that plague western Canada, these weeds costing that country some $100,000,000 annually, according to the January-February issue of "The Imperial Oil Review," official company publication.

The book also contains facts and figures collected from the experiences of weed authorities in all parts of the Dominion, and is being written with a view of being a comprehensive explanation of the methods used successfully by men who have cleared their land of weeds.

It is edited by Duncan Marshall, formerly minster of agriculture for Alberta. It is printed in good, clear type, is well bound, and will be mailed free of charge to all agriculturists who write the company for it.

Last year the Imperial company published a book "Field and Farmyard" which had a wide circulation.

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sells quicker in these bottles

With competition what it is in the oil business today, you can afford only one type of bottle for your samples:—the very best obtainable. That means Owens-Illinois oil sample bottles.

Hand-blown of the finest perfume-bottle glass, they display your product to the best advantage. Neck and finish are formed with special care and insure perfect and uniform corkage.

Your trade-mark blown on each bottle at a slight extra charge. Obtainable in 2, 4 or 8 oz. sizes. Samples gladly sent on request. Owens-Illinois Glass Company, Toledo, Ohio.

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BOTTLES

NEW— —NEW

JAY B. RHODES CO.

Originators of Visible Oil Dispensers

In this new visible oil dispenser is built many years practical experience of Jay B. Rhodes Co.—originators of visible oil dispensers. The new "Finger Tip Groove" provides a more convenient grip to give faster—safer service—without slipping. Other features—(1) re-enforced, turned-in spout end—(2) lock seamed joint of spout and dome (no solder used)—(3) new style vent of improved appearance. This new bottle is scientifically tapered to provide faster service and still maintain a low center of gravity reducing the breakage from tipping over to a minimum.

Write today for circular and prices.

JAY B. RHODES CO., KALAMAZOO, MICH.

Branch offices and warehouses—Tulsa, Oklahoma—London, Ontario, Canada

Complete One-Stop Station Repairs All Makes of Autos, Trucks

By E. L. Barringer
N. P. N. STAFF WRITER

COLUMBUS, O.

FUNCTIONS of the one-stop station and the garage are to be merged under one roof in a retail outlet planned for Columbus, O., by the Miller-Riley Oil Co. Complete service for autos and trucks, from lubrication to an overhauling of the motor, will be offered at the station.

The convenience of one-stop service, as represented by the present type of super station extended to include all automotive services prompted the company to building this type of outlet. The company considered that the motorist now makes two stops to get complete service—one at the super service station, the other at a service garage. The Miller-Riley company decided to bring the two-stop arrangement into a 100 per cent one-stop station.

The station will be near the retail district, so customers may have their autos serviced while they are attending to business. A site is being cleared now and the new station is expected to be opened in May.

To overcome the skepticism of the public on work done by a garage the Miller-Riley company has entered into an agreement with H. L. Bogen, garage man in Columbus, who will manage the station. The station will carry the name "Bogen Super Service." Petroleum products will be supplied by the Miller-Riley company, and its name also will appear on the signs.

The development of this type of one-stop service comes after the reorganization of a Columbus Independent jobber following a sell-out of the Central Ohio Oil Co.

Lloyd Riley, president of the Miller-Riley company, had been operating the Riley Oil Co. with several service stations in Columbus. Mr. Riley also operates the Suburban Transfer Lines, with about 90 intercity trucks out of Columbus.

B. W. Miller, vice-president and general manager, entered the company last year and it was renamed the Miller-Riley Oil Co. Mr. Miller came from the Central Ohio Oil Co. which had been sold to the Sinclair Refining Co. For 16 years he had been with Central Ohio, which had headquarters in Columbus. He was a salesman for 11 years, and had been a director for five years. He had remained for several months after the sell-out, until the operations were merged, then he entered business for himself.

As the Miller-Riley Oil Co. stands now it has four service stations and three bulk plants in Columbus, selling Simms gasolines. The main plant and office were purchased from the Refiners Oil Co.

The company is distributor in 11 Ohio counties for Pennzoil, and markets its own brand of oil. Around Columbus it has developed some business in ice machine, cylinder and engine oils.

In looking over the retail marketing situation the company decided that a complete one-stop service station was logical. It would be convenient for the motorist and profitable for the company. Mr. Bogen was found to have the confidence of many motorists, through many years in the garage business in Columbus, and the qualifications to operate such a station.

A site was selected near the retail business district after the corner was thoroughly checked. For four months company officials, Mr. Bogen, and the contractor surveyed traffic conditions at the site. Traffic was checked in the morning, afternoon, and evening on various days during the four months. Accessibility of the corner for motorists turning in was studied also.

The station will be open 24 hours a day. A complete line will be handled—gasoline, motor oils, lubrication, car washing, accessories, tires and tire repairing, batteries and charging and repairing, and all services for all makes of automobiles and trucks.

Lloyd Riley
President of the Miller-Riley Co., Columbus, O.

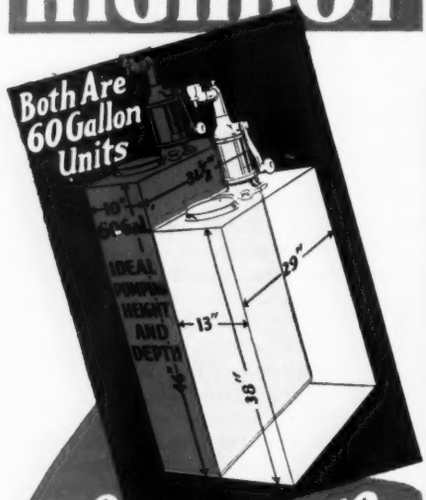
A.P.I. Tells Of Oil Drama

NEW YORK, April 1.—The first of its educational folders this year for distribution to motorists has been put out by the American Petroleum Institute. It is entitled "Drama Behind Your Gas" and tells of many dramatic incidents that happen in the oil field and refinery.

Five other folders will be published soon, according to Leonard M. Fanning, director of public relations. They are "Gasoline An Ideal Motor Fuel"; "How You Waste Gasoline"; "Gasoline the Cheapest Commodity"; "What About the Gasoline Tax?"; and "Keeping Up to the Demand for Gasoline".

B. W. Miller
Vice-president and general manager, Miller-Riley Oil Co., Columbus, O.

The NEW 10" WIDE 60 GALLON HIGHBOY



600 Gallon Storage on 8⅓ Ft of Floor Space

Merchandise "GRADE"! ... Car Owners like it!

INCREASE YOUR RANGE OF GRADES — add the three extra grades that the trade is asking for by spotting ten of the new 10-inch wide, 60-gallon "HIGHBOYS" in the space formerly filled by seven of your old 60-gallon units. Each uses 3 inches less front space and 62 square inches less floor area than the conventional 60-gallon units.

Write for BULLETIN No. 607

20% less Floor Area Per Unit!

3 extra Grades of Oil! — 10 in the Space of 7
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Handsome Easy Use
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DIVISION OFFICES and WAREHOUSES COAST TO COAST

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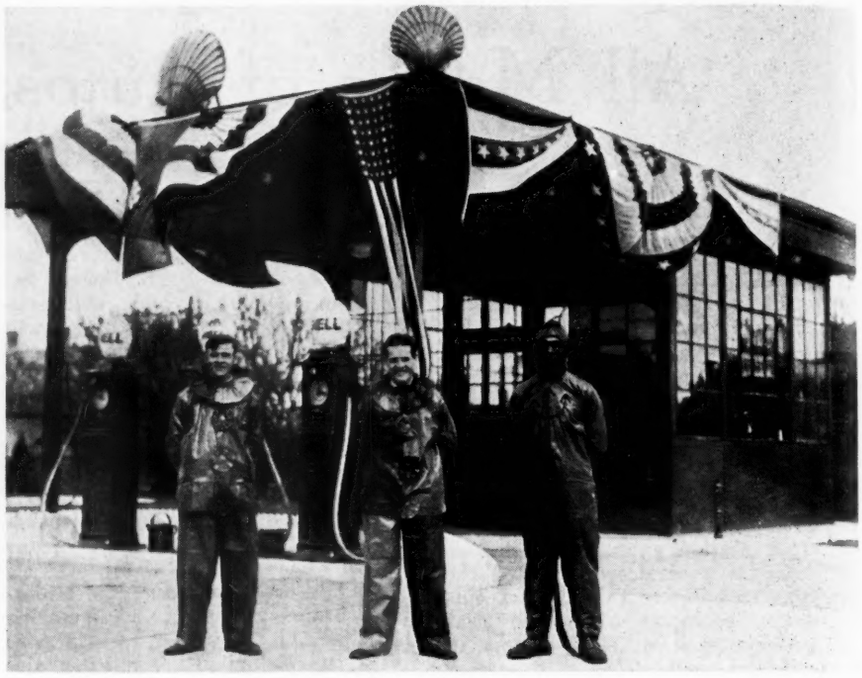
Pierrots Attract Motorists



A service station of the Shell Petroleum Corp. in New Orleans, and attendants, dressed up for the Mardi Gras festival

NEW ORLEANS, April 10

CAPITALIZING on the occasion that yearly attracts thousands to the city, the Shell Petroleum Corp. established a divisional record for gasoline sales at its service stations here.

During the Mardi Gras carnival held in New Orleans last February, the Shell company decorated 12 of its service stations with flags, bunting and streamers and attired its attendants in bright colored Pierrot costumes in keeping with the spirit of the festival. Station porters wore red devil outfits, made with the horns and tail.

The accompanying photograph shows one of its stations and the attendants thus dressed up.

Many comments were received from motorists by the station managers on the appearance of the stations and many were attracted and amused by the costumes worn by the attendants.

World's Average Gasoline Price Is 37.5 Cents

WASHINGTON, April 11.—The average retail gasoline price in 54 countries outside of the United States at the end of 1929 was 37.5 cents per gallon, and the average kerosene price was 31.1 cents, according to reports of prices in these countries contained in special circular No. 736 of the minerals division, Bureau of Foreign and Domestic Commerce Department of Commerce, Washington.

The average retail gasoline price at 160 points in the United States at the end of 1929, according to records of NATIONAL PETROLEUM NEWS, was 21 cents per gallon, and the average tank wagon price of kerosene was 14.5 cents. The bureau warns, however, of making comparisons of prices without taking into consideration the various factors which make inequalities in prices, such as distance from source of supply, transportation costs, import duties, excise taxes, distribution and marketing costs and many other factors.

All above average prices include gasoline taxes and are in United States gallons.

Six countries had gasoline prices over 50 cents per gallon at the end of the last year. Cities in these countries having such high prices were Addis Ababa, Abyssinia (Ethiopia), 71 cents; La Paz, Bolivia, 64.8 cents; Bogota, Colombia, 60 cents; Tananarive, Madagascar, 59 cents; Adelaide, Sydney and Perth, Australia, 53.9 cents; and Teheran, Persia, 50.8 cents.

The lowest gasoline price among these countries was at Shanghai, China. It was 21 cents per gallon.

The highest kerosene price was at La Paz, Bolivia. Price there was 68.1 cents per gallon.

The lowest kerosene price was 12.5 cents per gallon at Bucharest, Rumania.

Here are the retail gasoline and

kerosene prices in the 54 countries at the end of 1929.

(In Cents)

	Gasoline Cents	Kerosene Cents
Argentina	34.9	35.0
Australia	53.9	41.0
Austria	25.5	13.4
Bolivia	64.8	68.1
Brazil	41.6	29.2
British Malaya	44.3	37.2
Bulgaria	35.9	28.4
Canada	30.8	31.6
Chile	41.3	36.0
China	32.8	24.9
Chosen	32.1	34.9
Colombia	60.0	.....
Costa Rica	43.8	42.5
Cuba	28.0	45.0
Czechoslovakia	30.7	23.0
Denmark	30.3	25.3
Ecuador	37.0	31.5
Egypt	39.0	19.0
Ethiopia	71.0	40.4
Finland	28.6	16.1
France	37.1	34.1
Germany	30.4	29.6
Greece	39.0	49.6
Haiti	35.0	35.0
Hungary	22.6	16.1
India	34.1	21.8
Iraq	43.5	25.7
Irish Free State	35.4	32.4
Japan	27.3	30.8
Lithuania	26.5	26.0
Luxemburg	30.4	23.8
Madagascar	59.0	43.0
Mexico	31.1	27.6
Netherlands	27.2	21.1
Netherland East Indies	36.3	29.3
New Zealand	47.9	45.2
Nicaragua	40.0	39.0
Norway	23.4	19.5
Persia	50.8	28.5
Peru	40.0	24.0
Philippine Islands	34.8	21.0
Poland	36.1	27.6
Porto Rico	28.0	27.0
Rumania	29.4	12.5
Senegal	41.6	37.2
Society Islands	34.5	37.0
Spain	32.0	31.0
Sweden	27.4	16.5
Switzerland	40.1	29.1
Turkey	41.8	37.5
Union of South Africa	45.0	35.6
United Kingdom	35.0	26.0
Venezuela	34.0	43.5
Yugoslavia	44.9	45.1

Rome Moves On American Oil

CLEVELAND—How many American visitors to Rome annually realize that the busses that transport them along the Piazza di Venezia, from one cathedral to another, and about the city to view the architectural wonders of an ancient culture, are able to get there only through the efficiency of American lubrication?

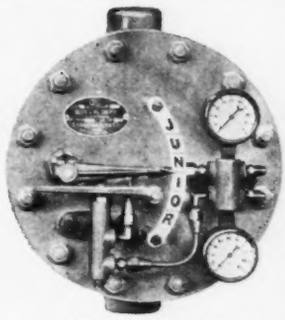
The cover of the March edition of the "Vacuum Oil News" pictures one of the 250 busses operated by the municipality of Rome, stationed in front of St. Peter's Square. Every one of these city-owned busses is lubricated with Gargoyle products made by the Vacuum Oil Co., New York.

Asphalt Conference Proceedings Published

NEW YORK, April 10.—The addresses and papers delivered at the eighth annual asphalt paving conference have been bound in a book of 247 pages by The Asphalt Association, 250 East 43rd St., New York.

It includes addresses and discussions of airport paving, low cost roads, waterproofing subgrades, resurfacing concrete roads, machine-finishing asphalt pavements and tells of experiences some states have had with oiled roads.

LIQUID LEVEL CONTROL

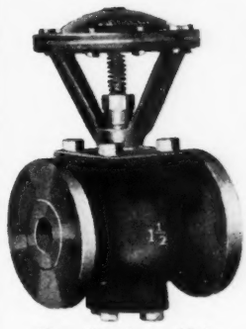


Junior Level Control

The new S & J Liquid Level Control with float ball and all wearing parts made of stainless steel, and equipped with the newly designed air pilot valve.

Differential pressure type, super-sensitive, assuring positive throttling action of the motor valve under all conditions, especially Hot Oil Service, Extreme Temperatures and High Pressures. Also on Interface Conditions.

S & J Diaphragm or Motor Valves are designed to give the same satisfactory service as our Liquid Level Control. We also recommend them for use in connection with Temperature Controls or Pressure Regulators.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HIGH GRADE PETROLEUM PRODUCTS

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CYLINDER STOCKS, (Filtered and Unfiltered).
MOTOR OILS—to match any specification.
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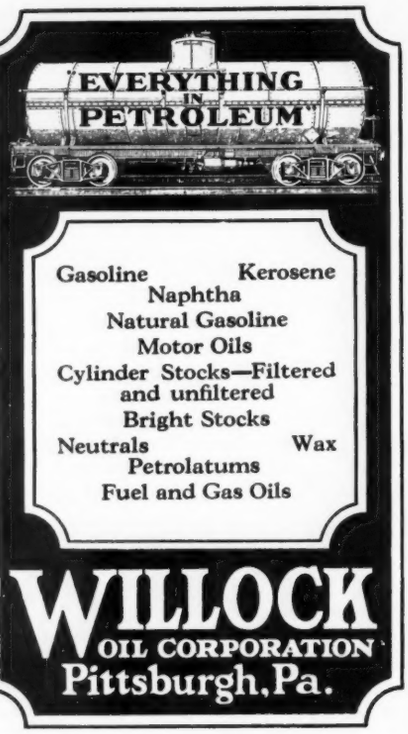

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Petroleum
SALES
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Large Southwestern refinery, marketing its own brand, has exceptional opening for man of personality and qualities of leadership. Must be executive type, widely experienced in every phase of marketing through bulk and retail service stations and franchise jobbers. Salary attractive and possibilities unlimited.

Replies confidential—our organization knows about this ad.

BOX 517
National Petroleum News

Phillips Equips Airplane to Test Fuel Under Flight Conditions

TULSA

IN COOPERATION with the Natural Gasoline Association of America, the Phillips Petroleum Co. has equipped its Travelair monoplane with a complete set of instruments for testing gasoline under conditions of actual flight. The additional equipment consists chiefly of instruments for recording all the temperature which might affect gasoline performance in the air.

Installation of the special recording instruments is shown in an accompanying photograph. The wall type millivoltmeter allows the pilot to obtain flight data unassisted, while a potentiometer operated from beside or behind the pilot's seat is used when more accurate readings are desired.

The instruments are so placed that the following temperatures may be determined at any time. Air temperature, right wing; temperature of vapor space in wing tank; temperature of gasoline in wing tank; temperature of vapor space in main tank; temperature of gasoline in main tank; temperature of gasoline feed line; temperature of gasoline in carburetor bowl; temperature of gasoline in fuel pump; temperature of gasoline in strainer; temperature of gasoline in wobble pump; temperature of air in carburetor intake; temperature of cylinder heads; and temperature of cylinder head flanges.

A.P.I. To Put Out 11 Oil Books

NEW YORK, April 4.—The first of a series that will discuss the fundamentals of the petroleum industry in non-technical language has been published and distributed by the American Petroleum Institute. It is entitled "What Is Petroleum" and has 16 pages.

The institute plans on preparing 11 additional booklets, all of which will be for sale to oil companies and others at cost. These booklets will be published:

Petroleum in Legend, in History, and Today; Petroleum, A World Industry; Conservation of Petroleum; The Petroleum Industry of the U. S.; Locating and Drilling an Oil Well; The Underground "Railway"—the Oil Pipe Line; How Petroleum Is Refined; Gasoline; Oil on the Seven Seas; Petroleum Marketing; and Products and Uses of Petroleum.

NEW YORK—Shell Eastern Petroleum Products, Inc., has bought five filling stations in Hudson county, N. J., from Eckel Bros. The price is reported to have been $200,000.

The special instrument panel in the airplane of Phillips Petroleum Co. used in testing gasoline under actual flight conditions

KEEP A LONG LINE *Moving!*

Speed is the slogan of motorists today! Speed that keeps the long line moving is one of the first things to look for when you purchase meter pumps. Profits depend upon it, for the motorist avoids a slow, inefficient station as if it were a plague... and buys where he can get "action!"

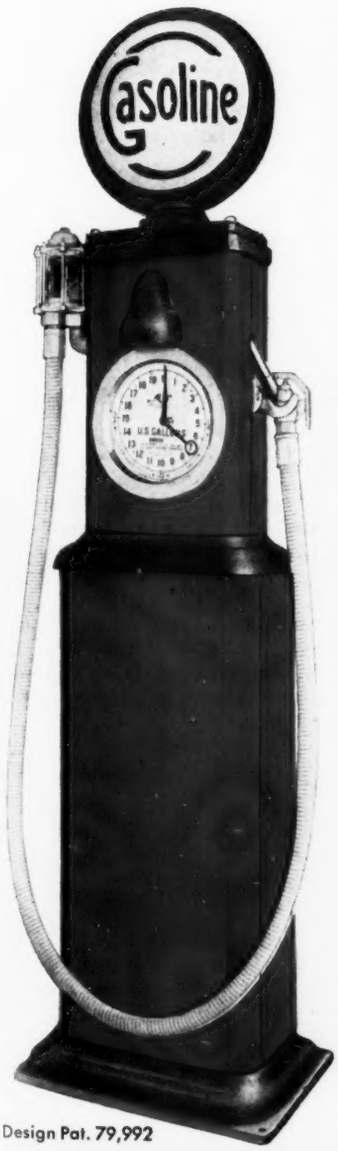
WHEN you buy M&S Meter Pumps you buy speedy service. Lifting nozzle off hook and starting motor is one operation. Returning nozzle to hook stops motor. No fussing with switches. Pumping unit delivers 18 gallons per minute like clock-work. Accessible set-back is quickly and easily operated. Everything arranged for the speed that keeps the long line moving!

7—9 GALLON PER SALE!

Higher per-sale average is another M&S Meter Pump feature. All over the country, the big 10 inch, 20-gallon dial encourages the motorist to think beyond the 5 gallon mark. Easily-read, honest-looking, this dial is boosting gallonage everywhere.

"SKYSCRAPER"

Built on a frame, not on a shell, the M & S Meter Pump is truly built like a skyscraper. Pumping unit, motor, meter and other parts anchored to strong metal framework. No parts attached to the shell — it serves merely as a cover to protect the interior.



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MARTIN & SCHWARTZ, Inc., BUFFALO, N. Y.
Meter Pump Pioneers
Complete stocks warehoused at the following locations:
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For the sake of your profits – get all the facts, now. Write for the M & S catalog showing complete line of M & S meter pumps in detail with prices and descriptions. Also illustrates hundreds of other items of equipment for your service station. Send for it today.

M&S METER PUMPS

Greasing

26 articles published in National Petroleum News the past 12 months have been devoted exclusively to telling how to sell lubrication service, and how to grease cars properly and profitably. How to build greasing stations, how grease is sold and other grease problems, are also discussed in these stories.

Here they are for your file reference:

1930

Lube company has $55 barrel washer
March 19, p. 163

Lube business so big grease disposal is problem
March 12, p. 69

Lubrication service by appointment and contract builds steady volume
March 12, p. 75

Tickler system costing $500 a year keeps lube customers coming
Feb. 26, p. 85

Improper chassis greasing brings brake trouble
Feb. 19, p. 93

Adopts paid-in-advance flat rate lube plan
Feb. 12, p. 72

Charts show points to be greased by numbers
Feb. 5, p. 34

How showmanship helps sell gear grease
Jan. 22, p. 96

1929

Gets 22 greasing jobs daily
Nov. 13, p. 24

Grease making, past and present
Oct. 16, p. 67

Tests of lubricating greases
Oct. 16, p. 69

Grease neglected, chemists say
Sept. 18, p. 33

Eight pointers on how to build up grease sales
Aug. 28, p. 100

Encloses grease pits for winter profits
Aug. 7, p. 101

How Omaha Ford dealers go after greasing
July 24, p. 82

Grease equipment specifications adopted by Conference of Weights and Measures
June 26, p. 96

Grease is future auto engine lubricant
June 26, p. 138

Grease pump code amended to permit sales by weight
June 12, p. 41

Grease gun specifications to come up June 6
May 29, p. 32-D

Non-metering grease pumps may be ruled out
May 22, p. 38

How jobbers can help greasing sales
May 22, p. 120

Grease stations may have to get new equipment
May 15, p. 32

Puts out grease chart for every car
May 15, p. 143

Takes lubrication to farm trade
Apr. 24, p. 104

Handbook on chassis greasing
Apr. 17, p. 110

Open air greasing stations in California
Apr. 10, p. 92

Back copies of any of the above issues are 25c a copy. On issues that are exhausted, photostats will be furnished at 40c per page. Libraries in the larger cities generally keep back files of National Petroleum News complete.

National Petroleum News
Main Office: 1213 West Third St.
Cleveland, Ohio

Along the Air Lanes

AN AERIAL mapping expedition, which will permit surveying of hundreds of square miles in a single day for possible oil deposits, has been embarked upon in Venezuela by the Standard Oil Co. of New Jersey. L. E. Shealy, pilot, and John Nelson, mechanic, took off in a Sikorsky amphibian from the Newark, N. J. airport Jan. 24, bound for Maturin, Venezuela.

The amphibian was purchased for use in Venezuela by the Creole Petroleum Corp., a subsidiary of the Standard of New Jersey. One of the ship's first tasks is to make a series of survey flights, recording observations from the air on maps. Graflex and Fairchild aerial cameras accompanied the fliers, as well as W. K. Wolford, photographer, and Philip M. Houston, radio operator.

Thousands of square miles have already been explored on foot in Venezuela for indications of oil deposits. The work has been slow and tedious, surveying parties frequently being compelled to ford streams and cut through the thick undergrowth of tropical jungles—often to find nothing of geological interest that would aid in the discovery of oil.

The airplane is powered by two 425 horsepower Wasp engines, with a top speed of 128 miles per hour, a wing spread of nearly 72 feet, and a load of 4000 pounds. This is the seventh plane to join the air fleet of the Standard of New Jersey and its subsidiaries, the others being two Lockheed-Vegas, a Curtiss "Robin," a Loening amphibian and Buhl Airsedan operated by the Standard of Louisiana, and a Hamilton seaplane owned by the Andian National Corp. at Cartagena, Colombia.

* * *

Under the caption "Air Mail Spans the Prairies While You Sleep," the Western Oil Co., Ltd., St. Boniface, Man., has put out a small pamphlet encouraging the use of air mail.

On one side of the leaflet is a map showing the official air mail routes in operation in Canada. The company supplies the Western Canada Airways with gasoline and lubrication exclusively.

It also gives a history of the first record flights in aviation, such as the first motor driven flight by the Wright Bros. at Kittyhawk, N. C. in 1903; the first flight with a passenger, by Delagrange and Farman, in France in 1908, and so on.

* * *

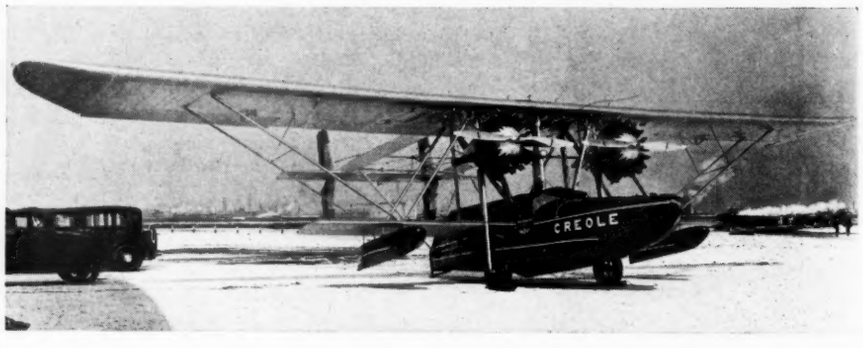
To afford L. H. Cooper, recently appointed aviation representative for The Texas Co. at Los Angeles, a fast means of travel and to help instill airmindedness into the general public, that company has purchased a single-seater biplane of the Great Lakes Aircraft Co.

This is the sixth plane to be operated by The Texas Co. It has been christened "Texaco Number Six." It is the first on the Pacific Coast to be equipped with what are called airwheels. Airwheels are like rubber pillows, permitting the airplane to land without hopping, and also enabling it to be set down on soft fields, swamp, sand, land or snow. The wheels carry from five to 20 pounds of air pressure.

The newly purchased biplane has a cruising speed of 80 miles per hour and is powered with an American Cirrus Mark three motor.

* * *

About 8000 gallons of gasoline are used every week at the Los Angeles airport of the Western Air Express to fuel its 50 planes which fly 8000 miles each day.



Here we go! Into the Venezuelan interior to do some aerial mapping for the Creole Petroleum Corp. This Sikorsky amphibian will cut the traveling time between Maracaibo and Maturin, Venezuela, from the usual week-to-10-days to about six hours

AT LAST..
THE IDEAL FUELING SYSTEM FOR AIRPORTS

THERE is little need to tell *you* about the great and growing market for gasoline at the airports. You have seen that for yourself. Probably you already have one foot in this virgin pasture.

But the marketer who *stays* is the one who dispenses his modern motor fuel from modern equipment. The G & B "Aeropit" is the answer. Does away with the costly method of sending tank trucks to the field. On the job twenty-four hours every day. Enables pilots to get your gasoline whenever they need it. Like all other G & B pumps the "Aeropit" sells speedily.

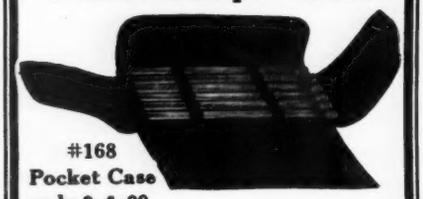
Airport managers like it because it reduces fire and accident hazards. Write for "Aeropit" Bulletin today.

GILBERT AND BARKER MANUFACTURING COMPANY
SPRINGFIELD, MASS.

"There are many different G & B pumps—but only one G & B quality"

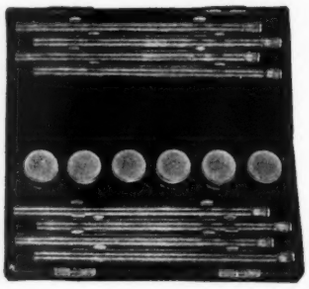
A. Turntable containing 50 feet of hose.
B. Rugged mechanism for recoiling hose.
C. Nozzle. (Note covered tip.)
D. Hand pump for removing water from pit.
E. Gasoline sales recorded on meter under this cover.
F. Pump operating switch.

Pocket Sample Cases



#168
Pocket Case
only $4.00

Sturdily constructed from black cobra grain cowhide. Lined with red plush. Contains six bottles. 9"x3½".



175—This case contains eight 9-inch bottles and six grease jars. Made from black cobra grain cowhide, lined with red plush. Has two serviceable nickel slide catches, price including metal capped corks, only..... $7.00

Less 10% for Cash
Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage
614 Delaware Kansas City, Mo.

PIPE BENDS
WELDED HEADERS
CAST STEEL FITTINGS
COMPLETE PIPING

We build standard or design and manufacture special for every refinery pressure and temperature service.

A third of a century of piping leadership.

Geo B LIMBERT PIPING & Co

562 FULTON STREET
CHICAGO, ILL.

NPN 4-16-Gray

ON THE LAZY BENCH

National Petroleum News

Anyway, He Knows His Cows

During the World War a very patriotic old lady was passing a farmer's barn one day and observed a young farmer boy milking a cow. He looked to be old enough to be in the army, and she was indignant to find him on the farm. He saw her, but didn't stop milking.

"Why are you not at the front?" asked the indignant patriot, and the quick reply was:

"Cause thar ain't no milk at thet end."

—Mid-Continent Petroleum Courier

* * *

A near-sighted man and his wife were inspecting an art exhibit with critical care.

"That's the ugliest portrait I've ever seen," he cried angrily, striving vainly for a better view of the abomination.

"Come away, you fool," replied his wife. "You're looking at yourself in a mirror."

— The Fuel Oil News

* * *

Sweet, Sweet Geranium

Smith: "Can I see the Secretary of Agriculture?"

Clerk: "Well, he's very busy, sir. What was it you wanted to see him about?"

Smith: "About a geranium of mine that isn't doing very well."

—Mid-Continent Petroleum Courier

* * *

Feminine Propensity

A lady who had a molar tooth pulled inquired of her dentist next day: "Every time I put my tongue into the cavity it seems so very large; what is the cause of that?" The dentist replied, "I don't know, Madam, unless it is the natural propensity of the feminine tongue to exaggerate."

—Magnolia Oil News

* * *

The significance of that old expression—"There is more in this than meets the eye"—must be fully appreciated by those people who still persist in eating grape fruit for breakfast.

—Union Oil Bulletin

* * *

"Sedentary work," said the college lecturer, "tends to lessen the endurance."

"In other words," butted in the smart student, "the more one sits, the less one can stand."

"Exactly," retorted the lecturer; "and if one lies a great deal, one's standing is lost completely."

—Isotopics

A Catastrophe

"Say, mister," said a little fellow to a next door neighbor, "are you the man who gave my brother a cat last week?"

"Yes."

"Well, ma says to come and take them all back."

—Pure Oil News

* * *

And How!

His letter from Italy read: "I'm enjoying Florence immensely."

Her answer read: "You can stay in Europe; I am having a great time with Oliver."

—Mid-Continent Petroleum Courier

* * *

And Lennie tells us the unfortunate endurance flyer who was obliged to come down on the thirtieth day to make another payment on his plane.

—Union Oil Bulletin

* * *

Worth About a Dollar

He: "I'm going to buy myself a harem."

It: "What do you mean? You can't buy a harem, can you?"

He: "Sure. I saw a sign at a gas station that said—'Six gals. for a dollar.'"

—Pure Oil News

* * *

A Sure Cure

"I can't marry him, mother. He's an atheist, and doesn't believe there's a hell."

"Marry him, dear, and between us we'll convince him that he's wrong."

—Magnolia Oil News

* * *

Long-Felt Want

Voice from the Eleventh Floor: "'Smatter down there? Have you no key?

Noisy One on the Pavement: "Gotta key all right, but wouldja jussassoon throw down a few keyholes?"

—Mid-Continent Petroleum Courier

* * *

Dave Cain says "First impressions are the most lasting." Apparently someone mashed Dave's fenders too.

—Union Oil Bulletin

* * *

Isn't That the Truth?

A high-pressure salesman was showing an Iowa prospect a strip of arid Texas land.

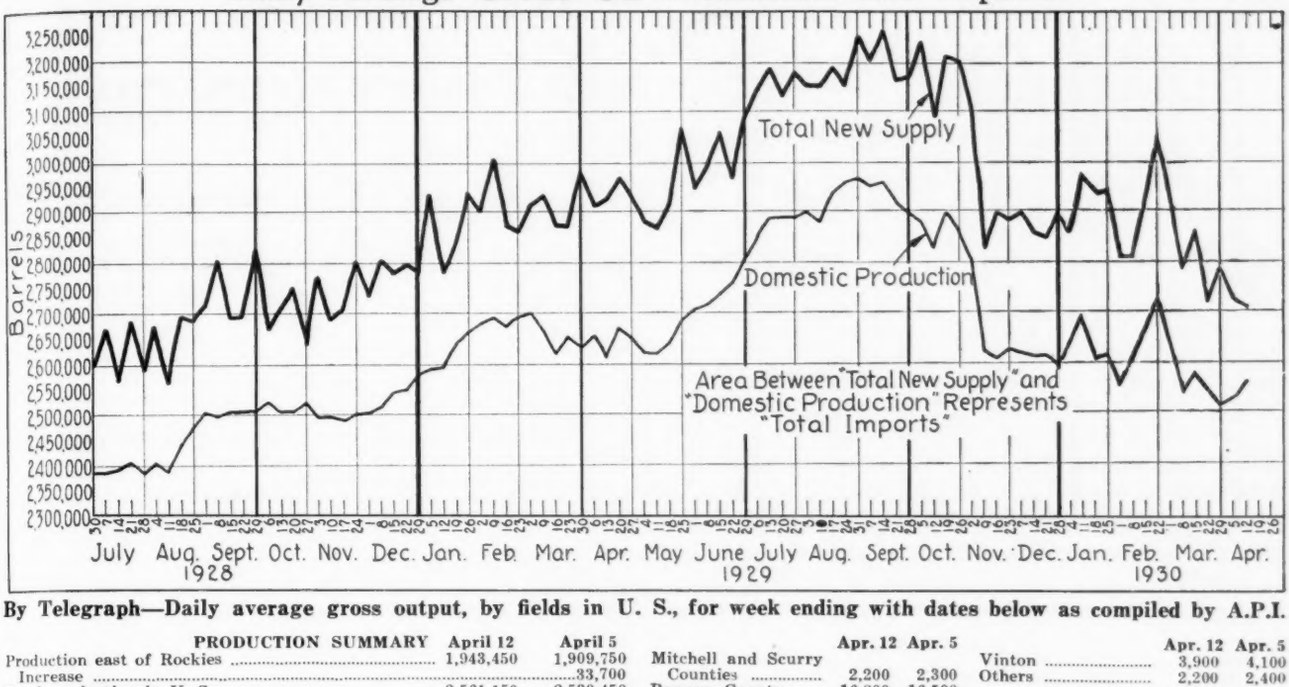
"This is the garden spot of the country," he said, "or it will be when a little development is done. Why, the truth is, all it needs now is a few good people and plenty of rain."

"I suppose so," said the farmer. "That's all hell needs."

—Pure Oil News

ADVERTISING PAGES REMOVED

Daily Average Crude Oil Production and Imports



By Telegraph—Daily average gross output, by fields in U. S., for week ending with dates below as compiled by A.P.I.

PRODUCTION SUMMARY	April 12	April 5
Production east of Rockies	1,943,450	1,909,750
Increase		33,700
Total production in U. S.	2,561,150	2,530,450
Increase		30,700
Crude oil imports	139,715	201,285
Decrease		61,570
Total new crude supply	2,700,865	2,731,735
Decrease		30,870

OKLAHOMA	Apr. 12	Apr. 5
Allen Dome	19,750	19,750
Asher	2,100	2,250
Blackwell	3,350	3,350
Bowlegs	20,800	18,900
Braman	3,450	3,450
Bristow-Slick	16,100	16,150
Burbank	16,500	16,400
Carr City	9,800	8,950
Cromwell	7,850	7,600
Cushing	14,300	14,300
Davenport	1,150	1,150
Duncan District	7,200	7,300
Earlsboro	35,400	32,050
East Earlsboro	41,950	39,000
Fox	1,250	1,300
Garber	4,550	4,550
Graham	3,550	3,550
Healdton	11,950	11,950
Hewitt	7,200	7,250
Hubbard	1,600	1,600
Konawa	8,650	8,900
Little River	41,550	39,500
Little River, East	19,900	17,900
Logan County	8,100	8,200
Maud	5,950	6,050
Mission	11,450	10,150
North Okmulgee	10,900	10,900
Oklahoma City	107,850	95,800
Osage (Outside Burbank)	26,650	26,600
Papoose	2,950	2,950
Pearson	650	650
Sasakwa	11,900	14,050
St. Louis	38,200	38,150
Scholem-Alechem	13,350	13,400
Searight	10,550	11,050
Seminole	20,400	18,300
Seminole, East	3,250	3,000
South Okmulgee	6,300	6,350
Thomas	650	650
Tonkawa	7,800	7,800
Wewoka	3,750	3,750
Yale-Jennings	9,850	9,850
Others	64,850	60,850
Total, Oklahoma	665,250	635,600
Increase		29,650

KANSAS		
Augusta-Fox Bush	2,900	2,900
Churchill	4,600	4,450
Eldorado - Towanda	13,450	13,450
Florence-Covert	800	800
Greenwood County	19,000	19,000
Oxford	2,750	2,700
Peabody-Elbing	3,300	3,300
Rainbow Bend	1,100	1,100
Russell	3,400	3,400
Sedgwick County	21,150	20,850
Voshell	20,500	13,100
Others	32,200	32,500
Total, Kansas	125,150	117,550
Increase		7,600

NORTH LOUISIANA		
Caddo, light	9,950	9,950
Caddo, heavy	2,800	2,600
Cotton Valley	2,100	2,300
De Soto and Red River	3,100	3,150
Havnesville	4,550	4,600
Holly	1,250	1,300
Homer	3,450	3,600
Sarepta Carterville	3,700	4,250
Urania	5,250	5,300
Zwolle	4,250	4,700
Others	1,800	1,950
Total, N. Louisiana	42,200	43,700
Decrease		1,500

ARKANSAS		
Champagnolle	4,750	4,800
El Dorado	4,000	3,950
Lisbon	1,050	1,000
Nevada	850	1,000
Smackover, light	5,300	5,250
Smackover, heavy	40,450	40,550
Stephens	950	950
Others	200	250
Total, Arkansas	57,550	57,750
Decrease		200

TEXAS (OUTSIDE GULF COAST)		
Panhandle District		
Carson County	9,100	9,450
Gray County	60,600	57,900
Hutchinson County	22,600	22,250
Wheeler County	550	800
Others	600	600
Total, Panhandle Texas	93,450	91,000
Increase		2,450
North Texas		
Archer County	17,450	17,500
Burkburnett	8,100	8,050
Electra	11,300	11,300
Iowa Park and K. M. A.	5,150	5,200
Montague-Cooke	10,600	10,750
Wilbarger	25,150	25,050
Others	2,000	2,200
Total, North Texas	79,750	80,050
Decrease		300
West Central Texas	Apr. 12	Apr. 5
Brown County	7,650	7,700
Callahan County	3,700	3,700
Coleman County	4,650	4,700
Eastland-Desdemona	5,500	5,550
Jack County	4,150	4,100
Palo Pinto County	700	700
Shackleford County	6,550	6,600
Stephens County	5,850	5,850
Throckmorton County	800	850
Young County	12,400	10,000
Others	1,400	1,400
Total, West Central Texas	53,350	51,150
Increase		2,200
West Texas		
Crane and Upton Counties	45,000	46,000
Crockett County	2,100	2,100
Ector County	6,450	4,500
Howard County	38,200	39,250
Jones County	2,100	2,100
Mitchell and Scurry Counties	2,200	2,300
Reagan County	16,800	16,500
Winkler County	81,000	85,000
Yates	110,550	111,250
Balance Pecos County	5,300	5,500
Others	2,700	2,700
Total, West Texas	312,400	317,200
Decrease		4,800
East Central Texas		
Boggy Creek	3,700	3,300
Corsicana-Powell	5,950	5,900
Currie	300	300
Mexia	4,100	4,000
Nigger Creek	200	200
Richland	250	250
Van Zandt	18,300	16,100
Wortham	850	850
Total, East Central Texas	33,650	30,900
Increase		2,750
Southwest Texas		
Dale	300	300
Darst Creek	15,000	15,000
Laredo District	8,450	8,500
Luling	9,850	9,900
Lytton Springs	900	900
Salt Flat	21,900	22,050
Somerset	1,300	1,300
Others	2,000	2,100
Total, Southwest Texas	59,700	60,050
Decrease		350
Total, Texas (outside Gulf Coast)	632,300	630,350
Increase		1,950

GULF COAST		
Coastal Texas		
Barbers Hill	27,00	28,850
Batson	1,250	1,200
Big Creek	3,100	3,150
Blue Ridge	1,800	2,000
Boling	1,200	1,150
Esperson	3,200	4,500
Damon Mound	600	600
Fannett	1,100	1,200
Goose Creek	4,500	5,050
Hull	8,800	8,900
Humble	20,500	20,300
North Dayton	1,350	1,000
Orange County	2,400	2,300
Pierce Junction	11,000	12,650
Port Neches	1,950	2,200
Raccoon Bend	10,250	10,300
Refugio County	38,900	40,100
Saratoga	1,000	1,050
Somerville	1,800	1,800
Sour Lake	2,200	2,250
South Liberty	4,550	4,650
Spindletop	15,800	15,300
Sugarland	10,000	10,500
West Columbia	5,950	5,900
Others	5,800	5,800
Total, Coastal Texas	186,000	192,700
Decrease		6,700
Coastal Louisiana		
East Hackberry	2,650	1,450
Old Hackberry	1,450	1,200
Edgerly	550	500
Evangeline	1,000	900
Lake Barre	1,050	1,500
Lockport	2,700	2,800
Port Barre	2,250	2,000
Sulphur Dome	4,400	3,150
Vinton	3,900	4,100
Others	2,200	2,400
Total, Coastal Louisiana	22,150	20,000
Increase		2,150
Total, Gulf Coast	208,150	212,700
Decrease		4,550

ROCKY MOUNTAIN		
Wyoming		
Big Muddy	2,050	2,050
Elk Basin	750	800
Grass Creek	2,100	2,200
Labarge	2,250	2,400
Lance Creek	150	150
Lost Soldier	3,250	3,100
Oregon Basin	4,450	4,700
Rock River	2,250	2,200
Salt Creek	29,400	31,500
Others	2,400	4,000
Total, Wyoming	49,050	53,100
Decrease		4,050
Montana		
Cat Creek	1,200	1,200
Pondera	2,000	1,750
Sunburst	6,000	6,000
Others	50	50
Total, Montana	9,250	9,000
Increase		250
Colorado		
Florence	550	650
Fort Collins	1,500	1,450
Moffat (Craig)	1,000	1,050
Others	1,500	1,450
Total, Colorado	4,550	4,600
Decrease		50
New Mexico		
Artesia	800	800
Balance Lea and Eddy Counties	8,100	7,800
Hogback	450	450
Rattlesnake	1,700	450
Table Mesa	100	100
Others	950	950
Total, New Mexico	12,100	10,550
Increase		1,550
Total, Rocky Mountain	74,950	77,250
Decrease		2,300
California		
Dominguez	9,700	9,500
Elwood-Goleta	45,500	40,800
Huntington Beach	28,600	28,700
Inglewood	17,600	18,000
Kettleman Hills	14,300	12,200
Long Beach	99,500	99,500
Midway-Sunset	70,000	72,500
Santa Fe Springs	124,000	128,500
Seal Beach	23,500	24,500
Ventura Avenue	43,000	43,500
Others	142,000	143,000
Total, California	617,700	620,700
Decrease		3,000
Eastern		
(Not including Michigan)	125,000	122,500
Increase		2,500
Michigan		
Mt. Pleasant	7,500	6,950
Muskegon	5,150	5,150
Saginaw	250	250
Total, Michigan	12,900	12,350
Increase		550

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended April 11 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Apr. 11
Plants Reporting	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)	94,500	161,700	106,100	82,000	77,000	521,300
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs	72,731 + 10.8	124,139 + 9.7	68,266 + 8.4	42,042 + 6.8	56,212 — 10.8	363,390 + 5.6
Da. Av. Other Oils	10,134 + 53.5	796 + 54.2	1,543 — 45.0	1,724 + 41.9	573 — 70.7	14,770 + 3.2
GASOLINE—Gallons						
Stocks, Apr. 4	26,729,000	68,479,000	23,149,000	10,843,000	14,011,000	143,211,00
Prod. 4-4 to 4-11	13,045,000 + 17.3	18,522,000 + 12.3	8,954,000 + 2.5	4,290,000 + 19.8	5,055,000 — 13.4	49,866,000 + 9.0
Ship. 4-4 to 4-11	12,269,000 — 0.8	20,795,000 + 9.1	8,633,000 + 6.1	4,845,000 + 55.3	5,412,000 — 4.1	51,954,000 + 7.5
Stocks, Apr. 11	27,505,000 + 2.9	66,206,000 — 3.3	23,470,000 + 1.4	10,288,000 — 5.1	13,654,000 — 2.5	141,123,000 — 1.5
Ratio Sales to Prod.	94.1%	112.3%	96.4%	112.9%	107.1%	104.2%
KEROSENE—Gallons						
Stocks, Apr. 4	7,618,000	6,856,000	2,672,000	60,000	2,734,000	19,940,000
Prod. 4-4 to 4-11	2,325,000 + 9.5	2,792,000 + 18.3	1,562,000 + 5.8	.....	413,000 — 22.5	7,092,000 + 8.7
Ship. 4-4 to 4-11	2,927,000 + 25.1	2,142,000 + 8.8	1,473,000 + 16.9	37,000	818,000 + 54.6	7,397,000 + 21.5
Stocks, Apr. 11	7,016,000 — 7.9	6,506,000 — 5.1	2,761,000 + 3.3	23,000 — 61.7	2,329,000 — 14.8	18,635,000 — 6.5
Ratio Sales to Prod.	125.9%	76.7%	94.3%	.....	198.1%	121.4%
STOVE DISTILLATE—Gallons						
Stocks, Apr. 4	2,771,000	3,145,000	197,000	236,000	46,000	6,395,000
Prod. 4-4 to 4-11	365,000 + 7.4	630,000 + 15.4	160,000 + 21.2	143,000 — 2.7	127,000 — 24.9	1,425,000 + 6.8
Ship. 4-4 to 4-11	198,000 — 32.5	737,000 — 7.2	216,000 — 31.2	161,000 + 71.2	127,000 — 50.4	1,439,000 — 17.8
Stocks, Apr. 11	2,938,000 + 6.0	3,038,000 — 3.4	141,000 — 28.4	218,000 — 7.6	46,000	6,381,000 — 0.2
Ratio Sales to Prod.	54.2%	117.0%	135.0%	112.6%	100.0%	100.9%
GAS OIL—Gallons						
Stocks, Apr. 4	6,212,000	42,132,000	2,542,000	4,762,000	8,397,000	64,045,000
Prod. 4-4 to 4-11	1,910,000 + 38.5	1,895,000 — 54.5	799,000 — 9.2	615,000 + 0.3	2,186,000 + 6.5	7,405,000 — 18.6
Ship. 4-4 to 4-11	1,424,000 + 49.6	2,294,000 — 24.5	1,660,000 + 60.7	550,000 — 23.5	1,984,000 + 27.4	7,912,000 + 8.3
Stocks, Apr. 11	6,698,000 + 7.8	41,733,000 — 0.9	1,681,000 — 33.9	4,827,000 + 1.4	8,599,000 + 2.4	63,538,000 — 0.8
Ratio Sales to Prod.	74.6%	121.1%	207.8%	89.4%	90.8%	106.8%
FUEL OIL—Gallons						
Stocks, Apr. 4	13,900,000	29,737,000	62,431,000	13,451,000	24,749,000	144,268,000
Prod. 4-4 to 4-11	5,469,000 + 17.0	7,726,000 + 22.2	8,844,000 + 16.1	6,597,000 + 11.5	5,600,000 + 1.6	34,236,000 +13.9
Ship. 4-4 to 4-11	5,031,000 — 8.0	6,969,000 — 11.6	4,222,000 — 61.6	7,372,000 + 37.4	6,336,000 + 11.2	29,930,000 —15.5
Stocks, Apr. 11	14,338,000 + 3.2	30,494,000 + 2.5	67,053,000 + 7.4	12,676,000 — 5.8	24,013,000 — 3.0	148,574,000 + 3.0
Ratio Sales to Prod.	92.0%	90.2%	47.7%	111.7%	113.1%	87.4%

Gasoline Produced by Various Methods, Week Ended April 11

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	7,842,000	60.1	12,962,000	70.0	6,398,000	71.5	3,898,000	90.9	1,931,000	38.2	33,031,000	66.2
Cracked	4,354,000	33.4	4,067,000	22.0	1,791,000	20.0	139,000	3.2	2,372,000	46.9	12,723,000	25.5
Natural	849,000	6.5	1,493,000	8.0	765,000	8.5	253,000	5.9	752,000	14.9	4,112,000	8.3
Total	13,045,000		18,522,000		8,954,000		4,290,000		5,055,000		49,866,000	

+ or — columns are % change over previous week.

Crude Runs Are Largest Since September

Staff Special—By Telegraph
TULSA, April 15

CRUDE oil runs at Mid-Continent refineries that report statistics on their operations weekly to NATIONAL PETROLEUM NEWS, were increased 19,000 barrels daily average in the week ended April 11. Only Louisiana-Arkansas plants ran less crude than in the preceding weeks.

In the field as a whole the daily average runs were the largest since the third week of last September.

Gasoline output was increased 4,100,000 gallons above the preceding week's production, but shipments were 3,600,000 gallons larger, and stocks were lowered 1,000,000 gallons. Drafts on stocks were reported by the Oklahoma, West Texas and Louisiana-Arkansas districts. April 11 gasoline stocks at the Mid-Continent plants covered in this report were only 112,-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended April 11. Change in stocks figures from March 14.

GASOLINE

	Gallons
Production	191,483,000
Shipments	201,267,000
Net change in stocks	—9,784,000
Ratio sales to production	105.1%

KEROSENE

	Gallons
Production	26,097,000
Shipments	28,087,000
Net change in stocks	—1,990,000
Ratio sales to production	107.6%

STOVE DISTILLATE

	Gallons
Production	5,716,000
Shipments	6,793,000
Net change in stocks	—1,077,000
Ratio sales to production	118.8%

GAS OIL

	Gallons
Production	34,212,000
Shipments	27,307,000
Net change in stocks	+6,905,000
Ratio sales to production	79.8%

FUEL OIL

	Gallons
Production	131,326,000
Shipments	130,391,000
Net change in stocks	+935,000
Ratio sales to production	99.3%

000 gallons larger than stocks April 12, 1929.

Kerosene production was down 400,000 gallons, shipments up 1,300,000 gallons, and stocks lowered 1,300,000 gallons.

Distillate stocks were unchanged with production up a little and shipments down 300,000 gallons.

Gas oil output was less and shipments larger than in the preceding week. Stocks were lowered a little.

Fuel oil stocks increased 4,300,000 gallons, only West Texas and Louisiana-Arkansas plants drawing on reserves.

Kentucky Marketers May Hire Secretary

COVINGTON, Ky., April 14.—The third annual meeting of the Kentucky Petroleum Marketers Association, according to present plans, will see the appointment of a paid field secretary to devote his entire time to association work and to the code of marketing ethics. The meeting will be held at the Brown Hotel, Louisville, May 6 and 7, says L. J. Connolly, secretary and treasurer.

It is likely that Paul Hadlick, secretary of the market committee of the American Petroleum Institute, will speak before the Kentucky association, giving interpretations of the code of maketing practices.

Officers for the coming year will be elected. There will be a special stag entertainment the evening of May 6.

New England Oil Men Hold First Golf Meet

NEW YORK, April 12.—The first golf competition of the season of the Independent Oil Men's Association of New England, took place April 9 at the Wollaston Country Club, just outside of Quincy, Mass. This event was scheduled for the morning and was followed at noon by a chicken dinner served in the club house.

Despite the keen salt air that swept the course a number of members and their guests took part in a "kicker's" handicap, in which Herbert Flemming, of Cambridge, associated with Alden Speare & Co., took first prize. President W. C. O'Meara, of the Quincy Oil Co., of Quincy, drew second prize.

The April 9 competition starts play for a trophy which again this year will be donated by the Richfield Oil Corp. of New York. It will be presented to the association through Richfield's Boston representative, J. I. Hornbeck.

C. Y. Hinchey, of Chicago, executive manager of the Independent Oil Men of America, attended the luncheon and briefly outlined progress being made by independent associations throughout the country.

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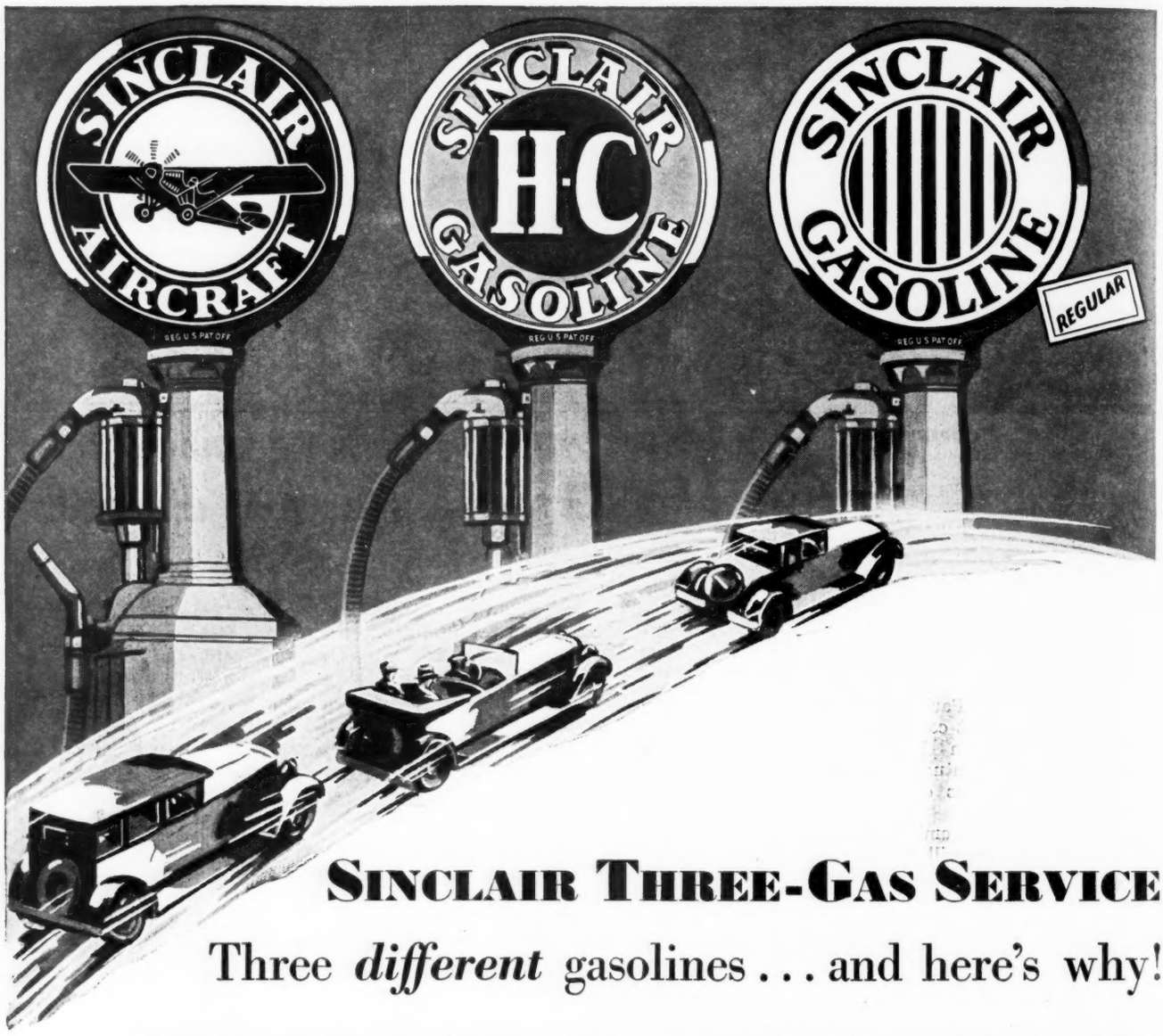

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And — for those who prefer to pay three cents less a gallon — here's Sinclair Regular Gasoline — full of eager power — full of mileage and economy! The quality gasoline at a popular price!

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Refinery - Tank Wagon Markets

National Petroleum News

Gasoline Prices Up 0.50 to 0.75 Cent Following Crude and T.W. Advances

CLEVELAND, April 15

ADVANCING crude and tank wagon prices throughout the middle west and in some sections along the Atlantic seaboard threw tank car gasoline markets into somewhat of a turmoil late last week. Prices surged forward.

Market reporters in the Mid-Continent and in the Chicago district found it exceedingly difficult to determine with any degree of certainty the extent to which prices had improved. Many large companies withdrew from the market entirely pending readjustment of their prices to higher crude costs.

By the end of the week, however, new price lists were out which quoted practically all grades of gasoline from 0.50 to 0.75-cent higher. At the same time, buyers were a bit hesitant about paying the higher prices with the result that published markets for the last two days of the week largely were nominal, being based almost wholly on quotations and not sales.

Gasoline shipments from the Mid-Continent area, probably largely those against contracts, showed a sizable increase, 3,600,000 gallons, with stocks being reduced 1,000,000 gallons.

Open market gasoline buying was much more active in districts remote from the Mid-Continent. Buying by jobbers for deferred shipment was particularly heavy in the Pennsylvania field. Most of the distributing trade which looks to Pennsylvania refiners for its supplies had covered on its requirements for the first half of April, but few jobbers had bought for shipment the last half of the month.

Advancing prices in other refining areas brought in a large volume of orders, and, according to reports, inquiries for May gasoline began to appear. Spot gasoline still was available in Pennsylvania at as low as 7.50 cents but buyers paid as much as 0.75-cent higher for futures.

Tank car prices in New England and at New York harbor advanced 0.25-cent following Standard of New York's 1-cent advance in tank wagon and service station prices on April 9. The Pacific coast market was the only one that failed to join in on the upward move of gasoline prices. Retail market conditions in this area went from bad to worse, and this permitted no improvement in tank car prices there.

Prices for other refined oils showed little change, even in districts where raw material costs had advanced. To date there hasn't been enough favorable weather to cause any appreciable increase in kerosene buying. Prices for this commodity held their own in the Mid-Continent while Pennsylvania material was offered rather freely at prices 0.125-cent lower.

The higher crude prices will halt the downward move in fuel oil prices in the Mid-Continent, according to the opinions of most traders in this area. Pennsylvania fuel oil continued soft.

Gasoline Spurts Upward in Chicago

Staff Special

CHICAGO, April 12

THE 1-cent advance in tank wagon gasoline prices by the Standard of Indiana, which followed closely advances in Mid-Continent crude oil prices, and the resultant jump of 0.50 to 0.75 cent in the spot tank car gasoline market, were outstanding features in the Chicago market the past week.

Prior to the Humble Oil & Refining Co.'s announcement of an advance in Texas crude prices, the Chicago resale gasoline market had passed a very quiet week. Spot buying was reported rather light in most quarters and sales of U. S. Motor gasoline were reported mostly at 6.50 to 6.75 cents, prices which had prevailed since the latter part of the previous week. However, less Motor was being offered at the 6.50-cent price and many of the Chicago marketers were moving goods at a low of 6.625 cents. On April 12, following the crude and tank wagon changes, practically all quotations on U. S. Motor ranged from 7 to 7.50 cents.

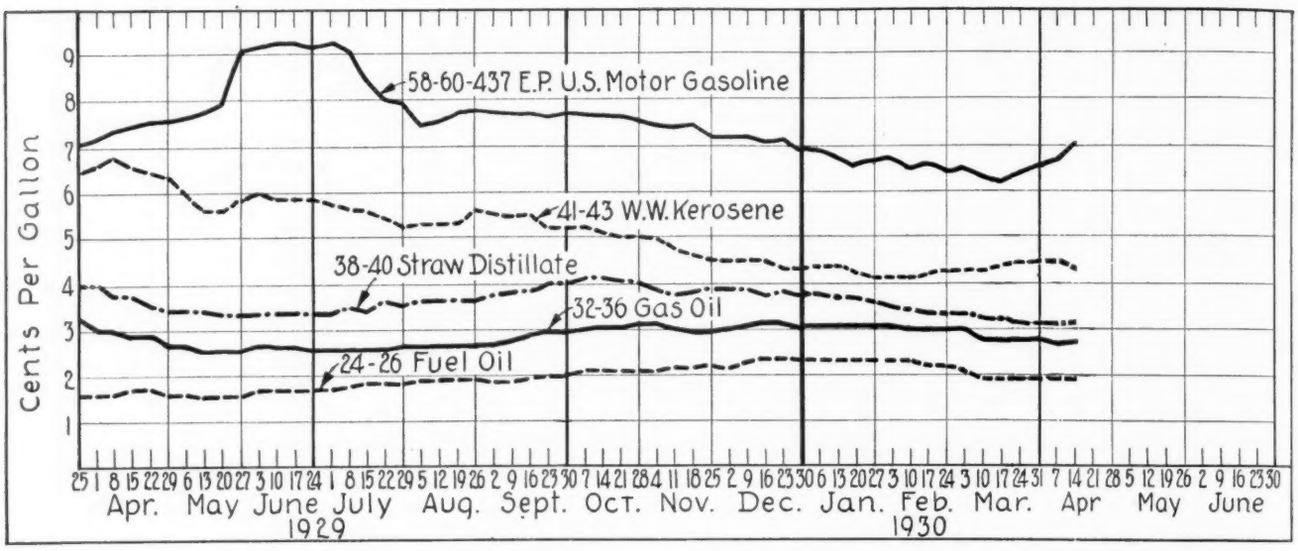
Many Chicago sellers withdrew their gasoline quotations immediately following the announcement of the Prairie Oil & Gas Co.'s advance in Mid-Continent crude. The market was considerably more unsettled by the announcement of the tank wagon gasoline advance and numerous sellers still refused to name a price on April 12. Others were quoting a price for immediate shipment only and practically all the sales reported on April 12 were on this basis.

Carlot marketers generally reported they were unable to locate any gasoline for shipment over the remainder of the month. A number of them said they had purchased some U. S. Motor gasoline, for April delivery, just prior to the crude and tank wagon advances but they were holding this gasoline until the market became more settled.

Quotations of carlot marketers on April 12 ranged from 7 to 7.50 cents on U. S. Motor gasoline. A few sales were reported at prices ranging from 7 to 7.25 cents. Marketers reported there was very little difference in price on gasoline from the various refining districts.

Practically all refiners offering U. S. Motor gasoline in the Chicago market were quoting 7.50 cents on April 12. Most of them said they had made no sales and were not anxious to sell for other than prompt shipment. Sev-

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr May June
1929
1930

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issu

eral of them reported receiving a considerable number of inquiries from jobbers, but said they found them unwilling to buy at this figure.

The market for high gravity gasolines was in practically the same condition as the market for U. S. Motor. Quoted tank car prices jumped approximately 0.50 to 0.75 cent on April 11 and 12. Sellers generally reported these prices as merely a guess at the actual market, as it was still too early to get a good line on conditions.

Considerable difference of opinion was apparent among the Chicago trade with reference to kerosene prices. Prior to April 11, a number of sellers had reported an excellent demand for the 41-43 w.w. grade and quoted a low of 4.375 cents. Other sellers said their demand was light and in one or two cases they offered this grade as low as 4.125 cents. Only a few sales were reported on April 12 and these ranged from 4.25 to 4.50 cents.

Several sellers said they believed that 4.50 cents would be bottom for good 41-43 w.w. kerosene next week, while others said they thought this market would not be much affected by the tank wagon and crude price changes. One Chicago marketer said he had canvassed Oklahoma and Texas refiners on April 12 and was unable to locate any good 41-43 w.w. kerosene for resale at under 4.50 cents.

The market for distillate, gas and fuel oils dragged along on a fairly even keel all week. Most sellers reported that demand for these products was quiet and that there had been little change in prices. Several expressed the opinion that the advances in crude oil prices would help to keep heavy oil prices from going lower. A number of the trade said they believed that gas oil prices would advance slightly, as with higher crude prices more gas oil would be used for cracking.

Precipitation is likely the first part of next week over the Standard of Indiana territory. Temperature probably will remain near normal most of the week.

Shipments From Southern California

LOS ANGELES, April 10.—Shipments of bulk petroleum from Southern California ports for week ended April 5, were as follows: (figures in barrels).

Destination	Crude	Gasoline	Diesel	Kerosene	Fuel	Gas-Oil	Total
Pacific For.	86,487	97,882	94,639	78,574	383,980	32,038	773,630
Atlantic Dom.	.....	193,900	.....	.....	.....	.....	193,900
Atlantic For.	.....	493,061	.....	.....	.....	.....	493,061

Total bulk shipments from Southern California ports for the month of March increased 683,795 barrels over February exports giving a total of 9,643,777 barrels that were distributed as follows:

	Crude	Gasoline	Kerosene	Distillate	Diesel	Fuel	Total
Pacific Dom.	529,528	1,040,518	13,762	4,627	165,667	2,256,986	4,011,088
Pacific For.	614,698	298,871	243,257	14,507	214,695	1,618,484	3,004,512
Atlantic Dom.	.....	971,416	84,568	.....	229,324	.....	1,285,308
Atlantic For.	.....	1,023,309	195,901	.....	123,659	.....	1,342,869
Total	1,144,226	3,334,114	537,488	19,134	733,345	3,875,470	9,643,777

Prices 10 Years Ago
April 12, 1920

	Oklahoma	Penna.
58-60 U. S. Motor	23.00c	24.50c
80-84 Natural	18.50–19.00c	.....
Kerosene (41-43 Okla.; 47 w. w. Pa.)	11.50–12.50c	15.50–15.75c
Fuel Oil (24-26 Okla.; 38-40 Pa.)	$2.90–$3.25	13.00c
Crude (Okla. 35-35.9)	$3.50	$6.10
Chicago tank wagon		25.00c

Prices A Year Ago
April 15, 1929

	Oklahoma	Penna.
58-60 U. S. Motor	7.4290c	9.25–9.50c
Grade A Natural	8.00c	.....
Kerosene (Okla. 41-43; Pa., 47 w. w.)	6.75c	8.50–8.75c
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.675–$0.725	5.375–5.75c
Crude (Okla. 35-35.9)	$1.17	$4.00
Chicago tank wagon		14.00c

Mid-Continent Refinery Markets

Crude and T. W. Advances Unsettle Gasoline

Staff Special
TULSA, April 12

MID-CONTINENT gasoline markets were thrown into a highly unsettled state late in the week of April 7 to 12 by crude oil price advances, followed by tank wagon advances in much of the middle west. It was extremely difficult April 12 to determine just what was the actual market on gasolines, and it probably will be the middle of next week before conditions become sufficient stable for one to venture an opinion as to the going prices.

The crude advance which came April 10 had been talked and rumored for several weeks, and the oil stocks on the New York Exchange, apparently had reacted to that talk, but even at that the change caused a chaotic condition, perhaps as much because the gasoline market was tending upward even without the aid of higher crude prices as for any other reason.

It was generally believed that any change upward in crude prices would cause an immediate advance in tank wagon prices by the Standard of Indiana, since it is no secret that company for some time has been determining its tank wagon prices with the cost price of Oklahoma crude as a basis instead of the tank car market price in Oklahoma.

Earlier in the week several refiners had advanced quotations for 58-60 U. S. Motor to 6.875 cents, and the market of its own accord, due to the excellent demand, had advanced 0.125 to 0.25 cent a gallon. Marketers had reported difficulty obtaining any gasoline at 6.50 cents, while a few said they had no trouble quoting 6.75 cents and getting the business. One sale over 30 days was reported at 7 cents.

When the crude advance was announced a majority of refiners withdrew from the market temporarily, probably to await action by Standard of Indiana. New quotations were soon issued, however, at 7.25 to 7.50 cents for U. S. Motor, with approximately the same increase—0.625 cent a gallon—placed on the other grades of gasoline.

A few refiners announced they would continue to accept confirmations until Monday at quotations out prior to the tank wagon advance, while others said they would quote the higher prices on all business.

As late as April 12 there was some gasoline in hands of brokers quoted at prices lower than the refiners' quotations but indications were that gasoline was being cleaned up rapidly, and marketers were actively seeking new supplies.

North Texas refiners were somewhat slower in advancing quotations than were the Oklahoma and Kansas refiners, but indications were they would be virtually in line early next week. All the refiners in that district were in good shape as far as orders and stocks were concerned and there was little doubt among the trade but that the prices would be close to 7.50 cents for U. S. Motor early next week.

The Louisiana and Arkansas refiners were placed in a rather peculiar position. After the crude advances in their district April 11 they advanced gasoline prices 0.25 cent for differential territory, making the new quotation 7.25 cents or 0.25 cent under the Group 3 quotations despite the fact they have a freight advantage to their normal marketing territory.

It was explained Saturday that no further advance was made because Standard of Louisiana had not advanced tank wagon prices, and with a 7.25 cent market f.o.b. refinery, jobbers in that territory were having to operate on an extremely narrow margin.

Just how firmly established the new quotations become depends to a great deal on the weather, many close students of the market said April 12. Continued favorable motoring weather in the middle west will keep consumption at a level sufficiently high to cause jobbers to draw on the stocks they had accumulated before the crude and tank wagon changes and many of them will be forced into the market for new supplies earlier than would be the case if inclement weather sets in.

The crude advance apparently will be borne by the light oils, according to the new quotation lists. No changes were made in kerosenes or the heavier oils.

Kerosenes were comparatively quiet all week but little change was noted in prices in any districts, except in Kansas where demand has been good, and in Louisiana and Arkansas. Refiners in the latter two districts apparently have worked off much of their surplus stocks the past few weeks and the situation has improved considerably. For a time Louisiana and Arkansas were the spots which held down kerosene in the Mid-Continent generally.

Distillates, gas oil and fuel oils were quiet throughout the week, with no important price fluctuations. Fuel oils were free in all districts except Louisiana, but the general opinion was the crude advance would check the downward trend in prices, particularly in Oklahoma, Kansas and Texas.

Natural gasolines were scarce for spot shipment, and with the crude and tank wagon advances, prices moved upward in line with those of refined gasolines. Two or three large buyers were in the market for varying amounts and with the large volume of small orders on their books for shipment the remainder of the month, manufacturers were in an excellent position.

Neutral oils were still scarce but no changes were made in prices. Bright stock demand was steady in some quarters while other manufacturers reported demand extremely light.

Wax was extremely quiet at unchanged prices.

Universal Files Four Patent Suits

CHICAGO, April 12.—Universal Oil Products Co. April 11 filed four suits against refiners charging infringement of patents on cracking which it owns.

The defendants in these suits are: Standard Oil Co. of New Jersey, Skelly Oil Co., Globe Oil & Refining Co., Illinois Oil Co.

The Standard of New Jersey is charged with infringing 15 patents in its operation of the Tube and Tank cracking process.

The Globe is sued on two grounds. Infringement is charged for the use of the Winkler-Koch and the so-called Donnelley process, and the Winkler-Koch Engineering Co. is a co-defendant in this suit.

The Skelly Oil Co. is charged with infringing six patents owned by Universal through operation of the Winkler-Koch process, and the Winkler Koch Engineering Co. also is a co-defendant in this suit.

Universal Oil Products Co. sometime ago obtained a judgment for infringement against Skelly for use of the Jenkins cracking process.

The suit against the Illinois Oil Co. charges infringement of six patents belonging to the Universal through the operation of the Donnelley cracking process. This suit was filed in the U. S. District Court at Springfield, Ill.

All three of these suits were filed in the U. S. District Court of Delaware at Wilmington.

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect April 14

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	7.0714	(Wt. Avg.)	7.0714	(Wt. Avg.)	.....
Kansas	7.50	.....	.....	.....	S. O. Neb. & Indiana Territory, etc.
Kansas	.....	.....	7.7500	(Wt. Avg.)	Kansas only.
North Texas	7.25–7.50	.....	7.00–7.50	.....	.....
West Texas	7.50	.....	7.50	.....	.....
Louisiana-Arkansas	7.25	.....	.....	.....	Michigan, Ohio and Indiana.
Louisiana-Arkansas	.....	.....	7.25	.....	State or differential haul.
Indiana-Illinois	7.50	.....	.....*	.....	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Chicago Resale Market

CHICAGO, April 12

THE Chicago market ended the week in a highly unsettled condition with U. S. Motor quotations for spot shipment mostly at 7 to 7.50 cents. Prior to the tank wagon and crude price advances, spot prices for U. S. Motor had ranged from 6.50 to 6.75 cents. Few sales were reported April 12 and many sellers refused to quote a price on gasolines. Distillate, gas and fuel oils were quiet all week and prices of these products apparently were unaffected by the crude and tank wagon changes.

Following prices represent majority of sales made on Group 3 freight basis, although shipments may originate in other refining districts such as north and west Texas, Arkansas, Louisiana, Indiana, Illinois, Kentucky, etc.

	Prices Apr. 14	**Prices Apr. 7**	**Prices Mar. 31**
58-60 U. S. Motor, 437 e.p.	†7.00 – 7.50	6.50 – 6.75	6.25 – 6.50
60-62 437 e.p. gasoline	†7.125– 7.50	6.625– 6.75	6.375– 6.50
60-62 400 e.p. gasoline	†7.375– 7.75	6.75 – 6.875	6.625– 6.75
64-66 375 e.p. gasoline	†7.75 – 7.875	7.25 – 7.50	7.125– 7.375
68-70 350-360 e.p. gasoline	†8.00 – 8.25	7.50 – 7.75	7.50 – 7.75
*Domestic Aviation Gasoline	9.50 – 9.75	8.75 – 9.50	.....
41-43 w.w. kerosene	4.375– 4.50	4.25 – 4.50	4.25 – 4.50
42-44 w.w. kerosene	4.625– 4.75	4.50 – 4.75	4.50 – 4.75
38-40 straw distillate	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
32-36 ordinary dark gas oil	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
32-36 dark zero gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
32-36 straw zero gas oil	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
28-30 zero fuel oil (per bbl.)	$0.95 –$1.00	$0.95 –$1.00	$0.975–$1.00
28-30 fuel oil (per bbl.)	$0.95 –$1.00	$0.95 –$1.00	$0.95 –$1.00
24-26 fuel oil (per bbl.)	$0.775–$0.825	$0.775–$0.825	$0.80 –$0.85
18-22 fuel oil, low sulfur (per bbl.)	$0.65 –$0.70	$0.675–$0.725	$0.675–$0.725
18-22 fuel oil, high sulfur zero (per bbl.)	$0.625–$0.675	$0.65 –$0.70	$0.65 –$0.70

*U. S. Govt. specifications or better; fighting grade in some instances sells at a premium over domestic aviation grade.
†Represents both sales and quotations.

Weighted Average Prices

OKLAHOMA

	Apr. 14		**Apr. 7**		**Mar. 31**	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of cars**	**Price**
58-60 U. S. Motor, 437 e.p.	14	7.0714	9	6.7361	4	6.5312
60-62 437 e.p. gasoline	1	7.5000	5	6.7500	5	6.5000
60-62 400 e.p. gasoline	1	7.5000	1	7.5000	1	6.8750
64-66 375 e.p. gasoline	No sales reported		2	7.3750	1	7.1250
*58-60 437 e.p. gasoline	..	7.25–7.50	..	6.50–6.75	..	6.375–6.75

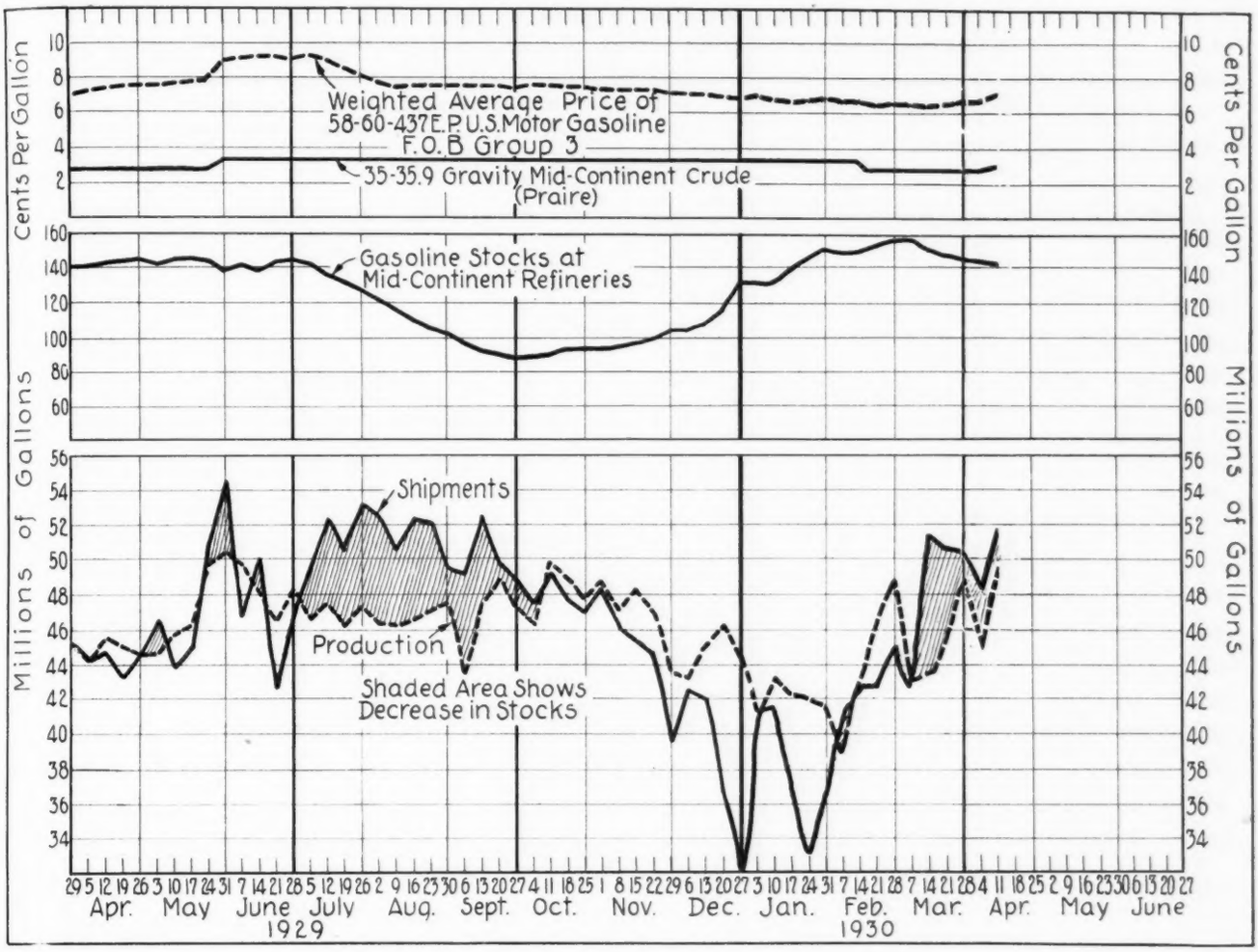
KANSAS

	Apr. 14		**Apr. 7**		**Mar. 31**	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of Cars**	**Price**
58-60 U. S. Motor, 437 e.p.	1	7.7500	1	7.0000	1	6.8750

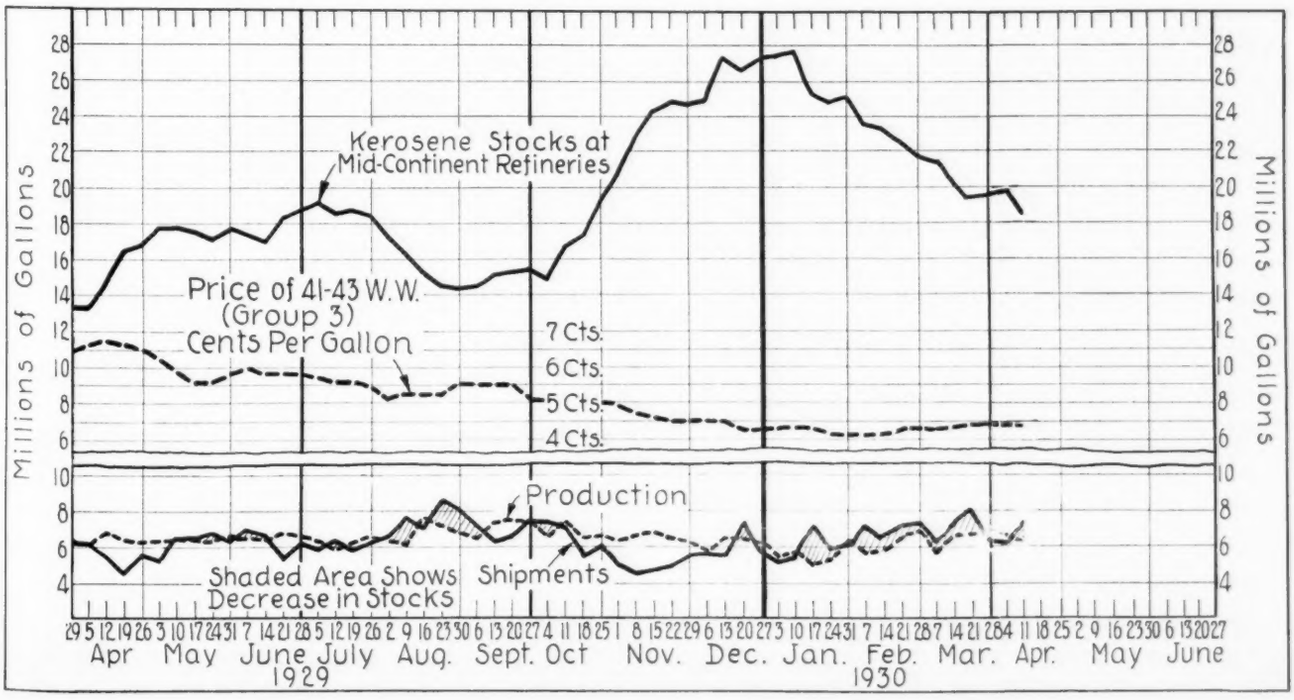
*Full U. S. Motor specifications not guaranteed. Prices represent both quotations and sales.

Barometer of Mid-Continent Refinery Market—Week Ending April 11

Charted Course of Prices, Production, Shipments, Stocks of Principal Re fined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Weighted Average Price of 58-60-437 E.P U.S. Motor Gasoline F.O.B Group 3
35-35.9 Gravity Mid-Continent Crude (Praire)
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Shipments
Production
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1929
1930

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 114



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Apr. 14	Prices Apr. 7	Prices Mar. 31
48-50 450 e.p. naphtha	7.00 – 7.25	6.25 – 6.50	6.25 – 6.50
50-52 450 e.p. naphtha	7.125– 7.25	6.25 – 6.50	6.25 – 6.50
56-58 450 e.p. gasoline	7.125– 7.25	5.75 – 6.25	5.75 – 6.25
58-60 450 e.p. gasoline	7.25	5.75 – 6.25	5.75 – 6.25
64-66 390 e.p. gasoline	7.75 – 8.00	6.75 – 7.25	6.75 – 7.25
68-70 350-360 e.p. gasoline	8.25 – 8.50	7.75	7.50
‡Domestic Aviation Gasoline	9.50 –10.50	8.50 – 9.50	.....

‡U. S. Govt. specifications or better; fighting grade in some instances sells at a premium over domestic aviation grade.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha	7.25 – 7.375	7.25 – 7.375	7.25 – 7.50
54-56 Naphtha	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
58-60 U.S. Motor 437 e.p.	7.50 – 8.25	7.50 – 7.75	7.375– 7.75
60-62 400-410 e.p. gasoline	8.00 – 8.50	7.75 – 8.25	7.625– 8.125
64-66 390 e.p. gasoline	8.25 – 8.50	8.00 – 8.50	7.75 – 8.50
68-70 350-360 e.p.	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline

Ohio, delivery at any point	10.50	10.00	9.50

KANSAS (F. o. b. refinery Kansas destination)

60-62 437 e.p. gasoline	7.875	7.25	7.00 – 7.25
60-62 400 e.p. gasoline	8.00	7.25 – 7.50	7.25
64-66 375 e.p. gasoline	8.25	7.50	7.25 – 7.50

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline	7.00	6.00	5.75 – 6.00
58-60 450 e.p. gasoline	7.00 – 7.25	6.00	5.75 – 6.00
58-60 U.S. Motor 437 e.p.	**7.00 – 7.50	6.375– 6.625	6.125– 6.375
60-62 400 e.p. gasoline	7.50 – 7.75	6.75	6.375– 6.50
64-66 390 e.p. gasoline	7.875– 8.00	6.75 – 7.00	6.75 – 7.00
64-66 375 e.p. gasoline	8.00 – 8.25	7.50	7.50
68-70 350-360 e.p. gasoline	8.25 – 8.375	7.75	7.75

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha	7.00	5.75	5.50
58-60 437 e.p. gasoline	7.25	6.00 – 6.25	5.75
58-60 U.S. Motor 437 e.p. gasoline	7.50	6.50 – 6.75	6.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor gasoline	7.50	7.00	7.00

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	7.50	7.00	7.00

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

54-58 U.S. Motor 437 e.p.	7.00 – 7.75	7.50 – 8.25	8.50 – 9.50
54-58 U.S. Motor, for outside state shipment	6.25 – 6.75	6.50 – 7.00	7.50 – 8.50
58-61 375-400 e.p. gasoline	8.25 – 9.50	8.50 – 9.50	9.50 –11.00
42-45 Engine Distillate 445-480 e.p.	7.00 – 8.25	7.00 – 8.50	7.00 – 8.50

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery	6.50	5.75	5.625– 5.75
Grade A, 72-79.9, 90% Recovery	6.50	5.75	5.75
Grade BB, 84-92, 85% Recovery	5.50 – 6.00	5.00	4.875– 5.00
Grade B, 76-83.9, 85% Recovery	5.75 – 6.00	5.00	5.00
Grade C, 80-92, 78% Recovery	5.50 – 6.00	5.00	4.75

NORTH TEXAS (F. o. b. Breckenridge)

Grade AA, 80-87.9, 90% Recovery	6.50	5.75	5.625– 5.75
Grade A, 72-79.9, 90% Recovery	6.50	5.75	5.75
Grade BB, 84-92, 85% Recovery	5.50 – 6.00	5.00	4.875– 5.00
Grade B, 76-83.9, 85% Recovery	5.75 – 6.00	5.00	5.00
Grade C, 80-92, 78% Recovery	5.50 – 6.00	5.00	4.75

NORTH LOUISIANA (F. o. b. Monroe District)

	Prices Apr. 14	Prices Apr. 7	Prices Mar. 31
Grade AA	†6.50	†6.25	†6.00
Grade BB	†5.75	†5.25	†5.25
Grade C	†5.75	†5.25	†5.00

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. blend	7.00 – 8.00	7.00 – 8.00	7.00 – 7.50

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w.w. kerosene	5.625– 6.00	5.75 – 6.125	5.75 – 6.125
46 w.w. kerosene	5.875– 6.25	6.125– 6.50	6.00 – 6.50
47 w.w. kerosene	6.25 – 6.50	6.375– 6.75	6.375– 6.75
300 mineral seal	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w.w. kerosene	4.25 – 4.50	4.375– 4.50	4.25 – 4.50
42-44 w.w. kerosene	4.75 – 5.00	4.75 – 5.00	4.75

KANSAS (F. o. b. refinery Kansas destination)

41-43 w.w. kerosene	4.875– 5.00	4.75 – 4.875	4.75 – 4.875
42-44 w.w. kerosene	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w.w. kerosene	4.125	4.125	4.125
41-43 w.w. kerosene	4.25	4.25 – 4.375	4.25 – 4.375

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w.w. kerosene	5.00	4.75	4.75
42-44 w.w. kerosene	5.25	5.00	5.00

ARKANSAS (Ark., N. La. and Miss. destination)

42-44 w.w. kerosene	5.25	5.00	5.00

CALIFORNIA (F. o. b. California refineries)

38-40 w.w. kerosene	3.75 – 4.50	4.25 – 5.00	4.50 – 5.50

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.		(Viscosity at 70° F.)	
200 No. 3 Assoc. Filt.	25.00 –26.00	25.00 –26.00	25.00 –26.00
180 No. 3 Assoc. Filt.	21.00 –22.00	21.00 –22.00	21.00 –22.00
150 No. 3 Assoc. Filt.	15.00 –16.50	15.00 –16.50	15.50 –17.00
		(Non Viscous)	
34 Grav. 330-340 Flash	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50

****OKLAHOMA** (F. o. b. Oklahoma refineries)

Vis.	Color	(Viscosity at 100° F.)		
100—No. 2		6.00 – 7.50	6.00 – 7.50	6.00 – 7.50
150—No. 3		8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
150—No. 4		7.00 – 8.50	7.00 – 8.50	7.00 – 8.50
180—No. 3		9.00 –10.50	9.00 –10.50	9.00 –10.50
180—No. 4		9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 5		8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
200—No. 3		12.00	12.00	11.00 –12.00
200—No. 4		10.00 –11.50	10.00 –11.50	10.00 –11.50
200—No. 5		9.50 –11.00	9.50 –11.00	9.50 –11.00
220—No. 3		12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4		12.00 –12.50	12.00 –12.50	12.00 –12.50
220—No. 5		11.00 –12.00	11.00 –12.00	11.00 –12.00
240—No. 3		13.50 –15.50	13.50 –15.50	13.50 –15.50
240—No. 4		12.50 –14.50	12.50 –14.50	12.50 –14.50
240—No. 5		12.00 –14.00	12.00 –14.00	12.00 –14.00
280—No. 3		17.00 –18.00	17.00 –18.00	17.00 –18.00
280—No. 4		15.00 –17.00	15.00 –17.00	15.00 –17.00
280—No. 5		14.00 –15.50	14.00 –15.50	14.00 –15.50

†Prices nominal ††Only one refiner quoting *Quotations only **Represents Both Sales and Quotations.

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis.	Color	Prices Apr. 14	Prices Apr. 7	Prices Mar. 31
		(Viscosity at 100° F., pour test 0)		
100	No. 2 Pale	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
200	No. 3 Pale	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
300	No. 3 Pale	10.75 –11.00	10.75 –11.00	10.75 –11.00
500	No. 3½ Pale	12.00 –12.25	12.00 –12.25	12.00 –12.25
750	No. 4 Pale	13.50 –13.75	13.50 –13.75	13.50 –13.75
1200	No. 5 Pale	16.00 –16.50	16.00 –16.50	16.00 –16.50
200	No. 5½ Red Oil	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
300	No. 5½ Red Oil	10.00 –10.25	10.00 –10.25	10.00 –10.25
500	No. 6 Red Oil	11.25 –11.50	11.25 –11.50	11.25 –11.50
750	No. 6 Red Oil	12.75 –13.00	12.75 –13.00	12.75 –13.00
1200	No. 5-6 Red Oil	15.00 –15.25	15.00 –15.25	15.00 –15.25

‡CALIFORNIA (F. o. b. California refineries)

Vis.	Color	(Viscosity at 100° F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50	11.50	11.50
300	No. 3	13.00	13.00	13.00
450	No. 3	15.50	15.50	15.50
550	No. 3	16.50	16.50	16.50
600	No. 3	17.00	17.00	17.00
200	No. 5	11.00	11.00	11.00
300	No. 5	12.00	12.00	12.00
400	No. 5	14.00	14.00	14.00
500	No. 5	15.00	15.00	15.00
600	No. 5	16.00	16.00	16.00
700	No. 7	18.00	18.00	18.00

‡Neutral oils not manufactured commercially in California.

CYLINDER STOCKS

****OKLAHOMA** (F. o. b. Oklahoma refineries)

190-200 Vis. D at 210° Brt. St.	41.00 –42.00	41.00 –42.00	41.00 –42.00
150-160 Vis. D at 210° Brt. St., ‡15-20 cold test	37.00	37.00	37.00
150-160 Vis. D Brt. Stock, ‡25-45 cold test	36.00 –36.50	36.00 –36.50	36.00 –36.50
150-160 Vis. E 210° Brt. St.	35.00 –36.00	35.00 –36.00	35.00 –36.00
600 St. Ref. Olive Green	9.00 –10.00	9.00 –10.00	9.00 –10.00
600 St. Ref. Dark Green	9.00	9.00	9.00
Black Oil	5.00	5.00	5.00

‡Cold test specifications added Apr. 7 and pour tests eliminated.

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	23.50 –24.50	23.50 –24.50	23.50 –24.50
650 Steam Refined	29.00 –31.00	29.50 –31.00	29.00 –31.00
600 Flash	31.00 –33.00	31.00 –33.00	32.00 –33.00
630 Flash	35.00 –36.50	35.00 –36.50	35.00 –36.50
600 Warren E	29.50 –30.00	29.50 –30.00	29.00 –30.00
600 Oil City E	29.00 –29.50	28.50 –29.50	28.00 –30.00
600 D Filtered	34.50 –35.00	34.50 –35.00	34.00 –35.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	39.50 –41.00	39.50 –41.00	39.50 –41.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	38.50 –40.00	38.50 –40.00	38.00 –40.00

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale, a.m.p.	2.625– 2.75	2.625– 2.75	2.625– 2.75
124-126 white crude scale, a.m.p.	2.625– 2.75	2.625– 2.75	2.625– 2.75

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries)

124-126 White Crude Scale, a.m.p.	2.375– 2.50	2.375– 2.50	2.50

CALIFORNIA

Prices on California wax discontinued, as very little is made in California.

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	4.00 – 4.50	4.125– 4.50	4.25 – 4.50
30-34 fuel oil	4.00 – 4.25	4.125– 4.375	4.25 – 4.50
28-32 fuel oil	4.00 – 4.25	4.125– 4.375	4.25 – 4.50

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Apr. 14	Prices Apr. 7	Prices Mar. 31
38-40 straw distillate	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
36-38 straw distillate	2.875	2.875	2.875
32-36 straw gas oil	2.50 – 2.75	2.50 – 2.75	2.625– 2.875
32-36 straw gas oil zero	3.00	3.00	3.00
32-36 dark gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 dark gas oil zero	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
28-30 zero fuel oil (per bbl.)	$1.05 – 1.10	$1.05 – 1.10	$1.05 – 1.10
28-30 fuel oil (per bbl.)	$0.95 – 1.00	$0.95 – 1.00	$0.95 –$1.00
26-28 fuel oil (per bbl.)	$0.85 – 0.95	$0.85 – 0.95	$0.85 – 0.95
24-26 fuel oil (per bbl.)	$0.80 – 0.85	$0.80 – 0.85	$0.80 – 0.85
22-26 fuel oil (per bbl.)	$0.725– 0.775	$0.725– 0.775	$0.75 – 0.80
18-22 fuel oil (per bbl.)	$0.625– 0.675	$0.625– 0.675	$0.625– 0.70
16-20 fuel oil (per bbl.)	$0.55 – 0.60	$0.55 – 0.60	$0.60 – 0.70
14-16 fuel oil (per bbl.)	$0.50 – 0.60	$0.50 – 0.60	$0.60 –$0.65

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
36-38 straw distillate	3.25	3.25	3.25
32-36 straw gas oil	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
18-22 fuel oil (per bbl.)	$0.80 – 0.85	$0.80 – 0.85	$0.80 – 0.85
10-14 fuel oil (per bbl.)	$0.725– 0.775	$0.725– 0.775	$0.725– 0.775

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
38-40 p.w. treated distillate	3.25	3.25	3.25
32-36 gas oil, cracked	2.50	2.50	2.50
32-36 St. reduced gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
24-26 fuel oil (per bbl.)	$0.60 – 0.65	$0.60 – 0.65	$0.60 – 0.65
20-24 fuel oil (per bbl.)	$0.55	$0.55	$0.55
18-22 fuel oil (per bbl.)	$0.50	$0.50	$0.50

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75
30-32 gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
28-30 zero gas oil	2.50 – 2.875	2.50 – 2.875	2.50 – 2.875
18-22 fuel oil (per bbl.)	$0.60 – 0.80	$0.60 – 0.80	$0.60 – 0.80

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	3.00	3.00	3.00
30-32 gas oil, straw	3.00	3.00	3.00
‡4-16 fuel oil (per bbl.)	$0.75 – 0.85	$0.75 – 0.85	$0.75 – 0.85

ARKANSAS (Ark., N. La. and Miss. destination)

30-32 gas oil, straw	3.00	3.00	3.00
32-36 dark gas oil	3.00	3.00	3.00
28-30 gas oil	2.75	2.75	2.75
20-24 fuel oil (per bbl.)	$0.95	$0.95	$0.95
9-12 fuel oil (per bbl.)	$0.75	$0.75	$0.75
Black oil	3.25	3.25	3.25

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.45 –$0.60	$0.50 –$0.65	$0.50 –$0.65
14-18 Bunker oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
30-34 gas oil (per bbl.)	$0.70 –$0.90	$0.70 –$0.90	$0.70 –$0.90
27 Plus Diesel oil (per bbl.)	$0.70 –$0.90	$0.70 –$0.90	$0.70 –$0.90

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. refinery. In tank cars ⅛c to ¼c per pound less.) Two refiners quoting.

Snow White	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Lily White	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
Cream White	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
Light Amber	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
Amber	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
Red	3.00	3.00	3.00

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

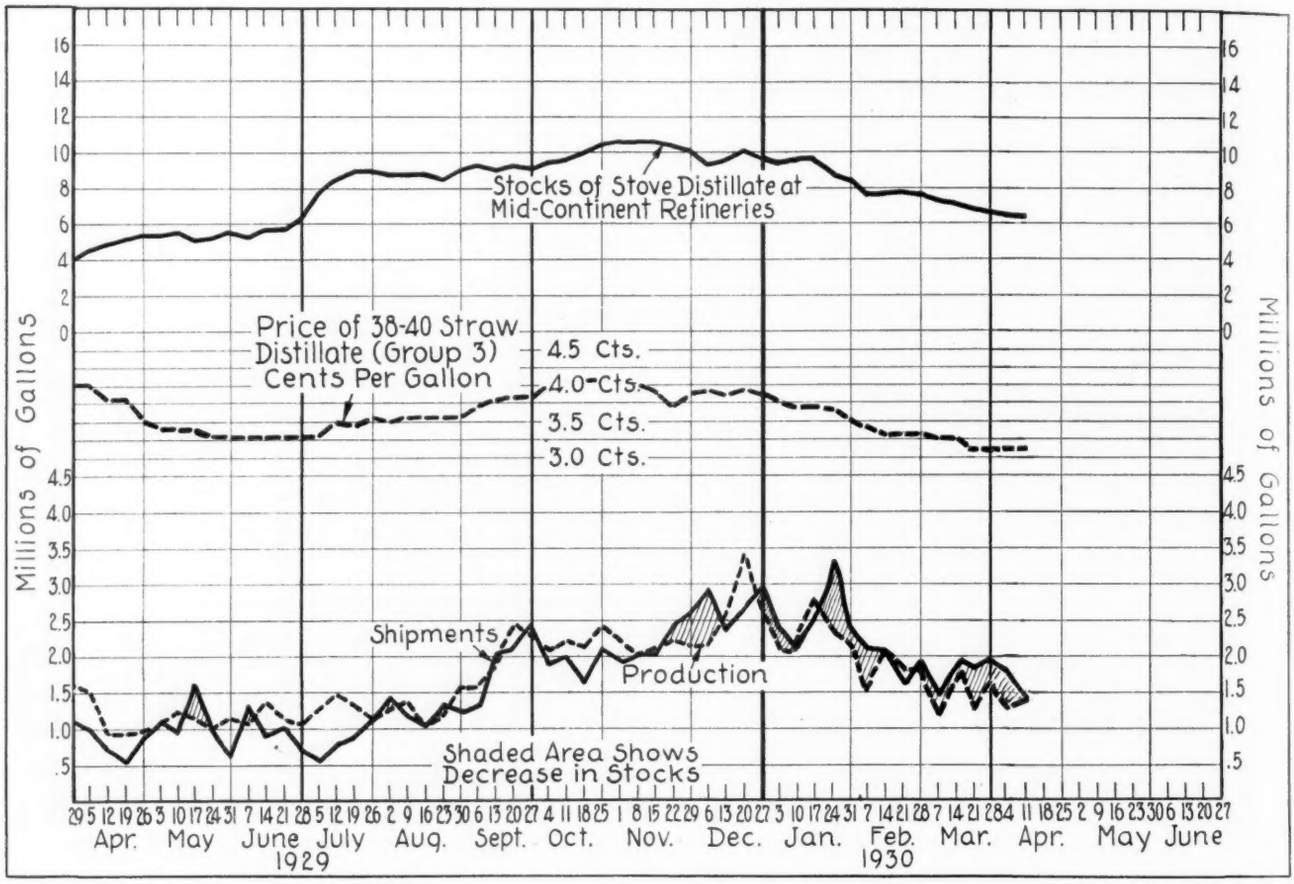
(Per ton in car lots)

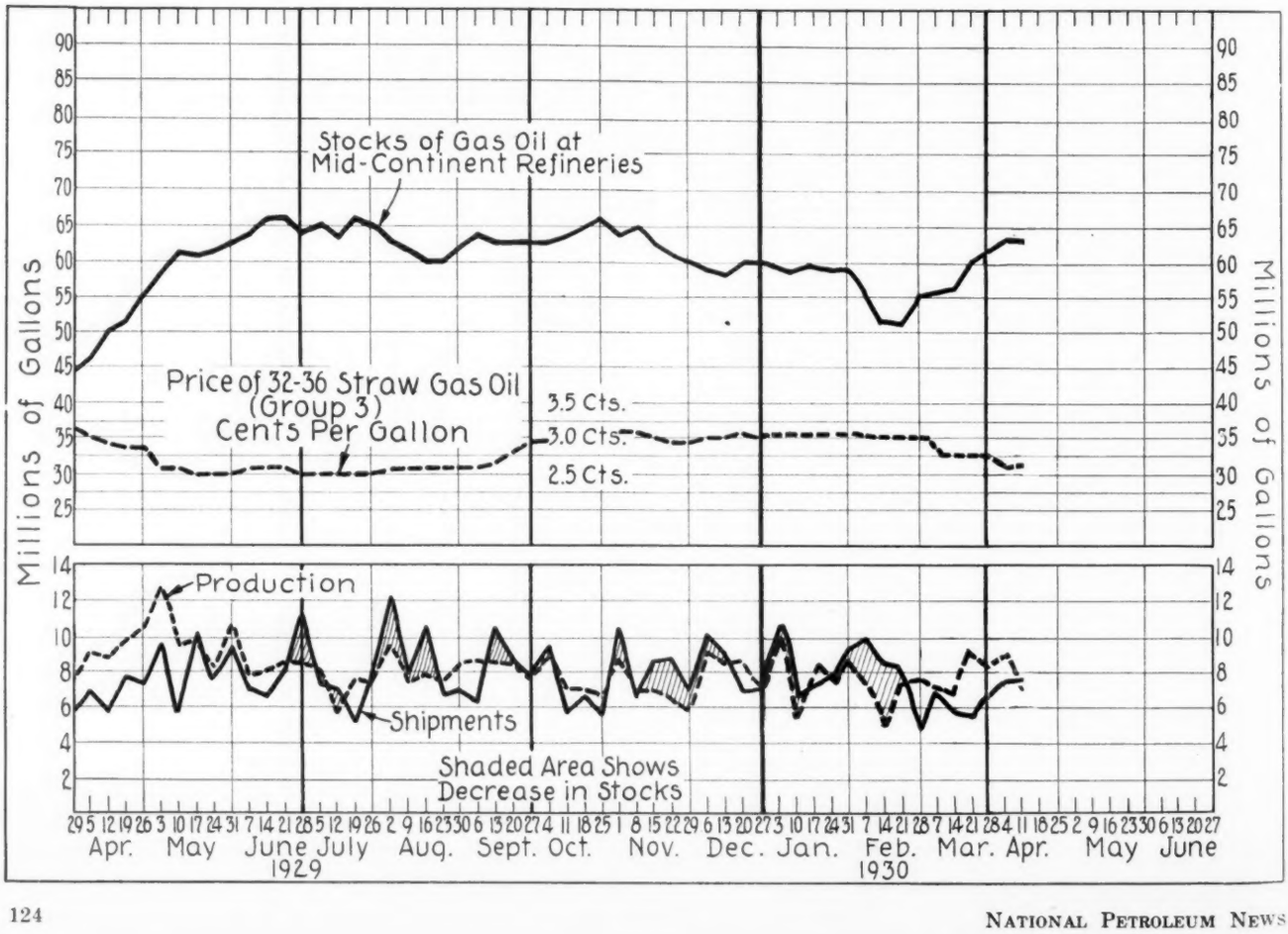
Lump	$4.50 – 5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

****Represents Both Sales and Quotations.**

Barometer of Mid-Continent Refinery Market—Week Ending April 11

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Millions of Gallons
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.5 Cts.
4.0 Cts.
3.5 Cts.
3.0 Cts.
Shipments
Production
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1929
1930


Millions of Gallons
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Straw Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1929
1930

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BE SURE THE METER PUMPS YOU BUY ARE EQUIPPED WITH BUFFALO* POSITIVE DISPLACEMENT METERS

THE gasoline pumps you buy for your retail filling stations are no more accurate or serviceable than their meter equipment. The meter is "the neck of the bottle," the part of your gasoline pump system that must be accurate and reliable.

Play safe! Be sure the meter pumps you buy are equipped with Buffalo Gasoline Meters.

FOR—

They are of the positive displacement nutating piston type—the simplest in design of any meter—with fewer working parts. Simplicity means longer life and more sustained accuracy.

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Buffalo Gasoline Meters are built in large quantities and are used by some of the largest pump manufacturers.

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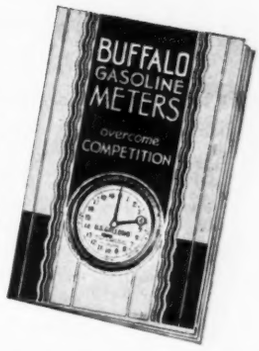

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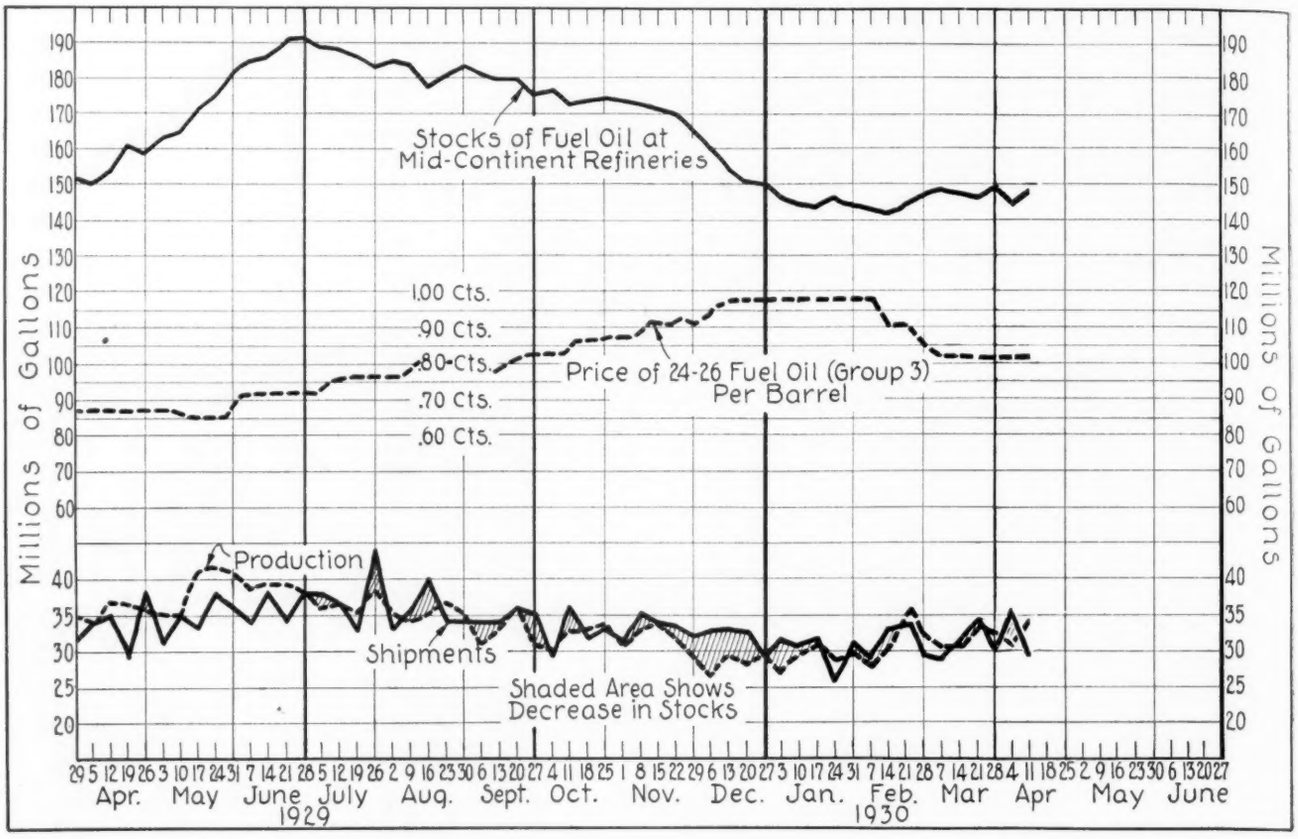
Barometer of Mid-Continent Refinery Market—Week Ending April 11

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



California Refinery Market

Export Inquiry Shows Improvement

LOS ANGELES, April 12

SCATTERED inquiries for heavy oils and gasoline constituted the only bright spots in the west coast export market during the past week. These inquiries were for the most part thought to be for the purpose of feeling out the market and were not constructed as firm offers.

Several independent refiners reported receiving an inquiry from an English buyer for approximately 425,000 barrels of U. S. Motor to be delivered between May 1 and Oct. 1. At latest reports no quotation had been made lower than 6.75 cents per gallon,—the Pacific Coast Export Association price,—although it was indicated that the buyer had expected to close the deal at a flat price of 6.50 cents over the period.

Increase of fuel oil prices on the Atlantic Seaboard during the past week was taken by a majority of the trade to indicate a turn for the better and several west coast sellers reported advancing their fuel oil quotations. Whereas this commodity has been reported available at $0.60 a barrel in cargo lots several suppliers raised their quotations to $0.65 and others indicated they might do likewise.

With bids scheduled to be submitted April 17 for Pacific Coast petroleum requirements of the United States Navy, which will include bunker C fuel oil and diesel oil, local refiners were speculating as to the probable amount of the winning bids.

Although the Japanese Navy was reported to have received a bid of $0.54 per barrel on its fuel oil business, it is expected the U. S. Navy business will bring a higher price because of the longer delivery period. However abundant fuel oil stocks on the west coast should prompt some competitive bidding.

Local gasoline markets took a new dip the past week particularly in southern California where price cutting activities of independent companies threatened to demoralize the retail markets.

Early in the week major refiners lowered the actual tank wagon delivery price to 11.50 cents and several independents were forced to meet these prices by laying their gasoline down at service stations for 10 to 10.25 cents, tax paid.

U. S. Motor for use within the state was reported freely available in tank car lots at from 7 to 7.75 cents, without tax and for distribution in adjoining states the price ranged from 6.25 to 6.75 cents.

Several of the trade reported receiving inquiries for kerosene with offered prices ranging from 3.75 to 4.50 cents. One dealer reported he had closed a deal for several tank cars of this commodity at 3.50 cents and that he had been offered a considerable quantity of distress goods at a shade under this figure.

Quotations on other refined products remained unchanged with few spot sales being reported in any one branch of the market. Current prices of fuel at points within the Los Angeles basin area ranged from $0.50 to $0.60 per barrel. One buyer reported having purchased several tank cars of fuel oil for shipment to distant points for as low as $0.375 per barrel.

Pennsylvania Market

U. S. Motor Up 0.25 to 0.375 Cent

CLEVELAND, April 12.—The western Pennsylvania market quickly joined the upward move in gasoline prices which got under way in other leading refining districts of the country the past week following the advances in crude and tank wagon markets throughout the middle west.

Tank car prices for gasoline in the Pennsylvania market were 0.25 to 0.375 cent higher on Saturday, April 12 than those which prevailed at the opening of the market Monday.

Trading of all commodities was relatively light throughout the week, although deferred shipment buying of gasoline still was fairly active. In addition to large quantities of U. S. Motor gasoline sold late last month for shipment over April at around 7.25 to 7.375 cents. Several refiners reported they had booked orders for 25 to 40 cars at substantially higher prices the past week. One refiner asserted the orders he had taken for shipment over the balance of the month totaled 42 cars at 7.75 cents. For additional business he reported he was quoting 8 cents.

Quotations as high as 8.25 cents for 58-60 U. S. Motor were heard late in the week, although companies quoting this figure reported they had received little business at this figure. A weekend of good motoring weather probably would bring many jobbers into the market next week, it was generally believed among the trade, and the higher quotations then would be substantiated by sales.

Kerosene prices slipped 0.15-cent early in the week and failed to come back with the advance in gasoline prices. More sellers quoted 5.625 cents for 45 w.w. kerosene and occasional cars of this grade were said to have sold at 5.50 cents. Sales at this price could not be confirmed, however.

All grades of fuel oil still were freely available at 4.125 cents a gallon. At the same time, several refiners reported being sold up for the balance of the month at higher prices. A large refiner outside the Pennsylvania field was in the market for fuel oil for cracking stock, offering around 3.75 cents f.o.b. Pennsylvania refinery. Most traders doubted if the refiner would be successful in obtaining any material at this price.

Prices of all other commodities generally were unchanged throughout the week. Inquiries for bright stock were reported coming in in larger volume but actual sales showed no material increase. Filterable steam refined stock was offered in slightly larger quantities, but according to reports this section of the market still was rather tight.

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National Petroleum News, 1213 W. Third St., Cleveland, Ohio

Gulf Coast Markets

Foreign Buyers Seek 12 Gasoline Cargoes

Staff Special
NEW YORK, April 12

FOREIGN buyers were active in the Gulf market in a large way the past week for the first time in several months. Six buyers entered the market for a total of 12 cargoes of gasoline. The sale of two cargoes was consummated and the others were reported under negotiation. Prices, however, were unchanged both in the domestic and export divisions of the Gulf market.

Circulation of the aforementioned inquiries through the market compared with the explosion of a bombshell and set up a buzz of conversation among Gulf suppliers. It was the first time in many months that buyers have come into the market for large quantities of material and placed their inquiries with refiners and brokers alike for offers. A good portion of the business since the first of the year has been done with members of the Export Petroleum Association, inquiries coming direct to the supplier, with the result that the trade generally learned little about them.

The six companies, three English and three French concerns, came into the market April 7. One of the English buyers sought five cargoes of 400 end point gasoline to move from California starting in June; another inquired for one cargo of 400 end point gasoline for June-July lifting and the third inquired for 61-63, 390 end point gasoline to be shipped late in May or early in June. The latter buyer was reported at the end of the week to have withdrawn his inquiry from the market.

One of the largest of French independents inquired for three cargoes of 64-66, 375 end point gasoline and U. S. Motor for shipment during June and July. For movement during the same period the second French account inquired for approximately 60,000 barrels of gasoline to be apportioned one-third U. S. Motor and two-thirds 64-66, 375 end point gasoline.

The other French buyer bought from a leading east coast refiner, a cargo of approximately 70,000 barrels of 64-66, 375 end point gasoline for May loading. The Association's price of 9.50 cents was paid by the buyer.

One of the English accounts also completed a deal with a leading American independent which calls for approximately 65,000 barrels of 64-66, 375 end point gasoline with the option of taking 25 per cent of this amount in kerosene. This business also went at the Association's price and is to be loaded the second half of May.

The sudden entrance of buyers into the market did not signify, the trade believed, that foreign storage was low, but rather that buyers were anxious to take advantage of the low market prevailing for clean ships. Since March 25 clean rates from California and the Gulf to the Continent and United Kingdom have declined from 5 to 12½ shillings per ton. Lower rates have been occasioned, according to some of the trade, by the laxity of business between foreign and American shores and also the removal of several ships from the California-Atlantic coast trade to trans-Atlantic service.

With the increase in field prices of gasoline and boosts in prices for crude oil, some of the trade have intimated that the Association would advance its posted prices at the Gulf. They believed substantiation would be given to a report of some weeks back that the recent reduction was only a temporary measure to relieve the situation existing in the Mid-Continent, when business was being transacted beneath the Association's postings. However, while actual confirmation from Association headquarters could not be obtained, it was reported by an informant in close touch with Association activities that no increase was being contemplated.

Eastern Domestic Markets

T.W. Advance Bolsters Gasoline Markets

Staff Special
NEW YORK, April 12

THE long looked for increase in tank wagon prices in Standard Oil Co. of New York territory which materialized the past week was the outstanding feature in eastern markets. Tank car gasoline prices in several New England districts and at New York harbor advanced following the increase in tank wagon. Other commodities were unchanged with the exception of bunker oil which was quoted 10 cents a barrel higher at several Atlantic seaboard points.

The tank wagon increase came April 9 and brought some relief to harassed sellers who were matching spot tank car prices against tank wagon contracts in several districts. It was announced a day prior to the actual advance in prices and caused a number of the trade to view the future of eastern gasoline markets with optimism.

The tank wagon increase was greeted most heartily by the New York harbor trade. Spot market sellers in this district have been forced to meet competition occasioned by low tank wagon contracts, the latter being responsible largely for the 7.75-cent U. S. Motor which has been offered rather freely until late the past week.

New York harbor sellers raised their U. S. Motor quotations to 8 cents minimum and indications were that if shading of posted prices became less prevalent and consumption increased as anticipated, prices would go still higher.

Another advance in tank wagon by Standard of New York was rumored among the trade late in the week but this could not be confirmed.

New England tank car prices were 0.5-cent higher. U. S. Motor was quoted at 9.50 cents, delivered, in the Boston and Providence districts and at 9.80 cents, delivered, in the Portland district.

Prices in other districts along the east coast were unchanged. Some shading of 8.25 cents for regular U. S. Motor was reported at Baltimore but this was done mostly in equalizing freight on shipments in competition with Philadelphia refiners.

California gasoline prices were unchanged and several distributors reported they did not anticipate any change in the immediate future. A distributor at Baltimore reported he had inquired of California refiners early in the week for a cargo of U. S. Motor and the best price he was quoted was 6.25 cents, f.o.b. the west coast. He was of the opinion, however, that this price could be shaded on firm offer.

Standard Oil. Co. of New Jersey advanced its posted price for grade C bunker oil 10 cents to $1.15 at New York harbor, Baltimore, Charleston and Norfolk early in the week, marking the first change in its posted prices since August, 1928. Other sellers met the advance.

Other commodities were unchanged in all districts. Kerosene sales were small in volume, most of the trade reported.

Wax Markets

Scale Lower at the Gulf

NEW YORK, April 12.—Wax markets continued relatively quiet the past week. Prices generally were unchanged although white crude scale was available at slightly lower prices at the Gulf toward the end of the week.

Prices for white crude scale at the Gulf slipped 0.125-cent to 2.50 to 2.75 cents. A few small orders were placed at the lower figure for prompt shipment to the Continent but buyers generally showed but little interest in buying even at that price.

The Spanish Monopoly early in the week inquired for 1000 tons of 125-127 A.m.p. fully refined wax, specifying prompt shipment. There was no definite report up to the end of the week to the effect that this business had been closed, although it was heard in some quarters that 800 tons had been purchased.

The trade generally was of the opinion that the Monopoly would have to shop around for the material and that probably it would come from a number of sources since very few suppliers were in a position to offer that much wax for prompt shipment. New York refiners were asking 3.50 to 3.625 cents for this grade and most sellers at the Gulf quoted the low of this range. The opinion was general, however, that these prices could be shaded on sizeable quantities.

There has been some inquiry from the Far East for small lots of match wax, the trade reported, but this has not resulted in sales. Suppliers continued to quote from 3.50 to 4 cents for match wax in tight wood barrels; these prices were higher than buyers were willing to pay.

English buyers were seeking large quantities of white crude scale for future shipment but in every instance their bids were too low to attract offers. Most inquiries bid 2.50 cents a pound, f.a.s. New York harbor or its equivalent c.i.f. the United Kingdom, and although small lots of spot stuffs have sold this low, sellers were unwilling to commit themselves over a period at this price.

Correction

On page 107 of the March 26 issue, price of Oklahoma 150-160 Vis. D bright stock, with 5-15 pour test, was shown at 36.00 to 37.00 cents as of March 24. Correct price on that date was 37.00 cents flat, as published correctly in the April 2 and April 9 issues of NATIONAL PETROLEUM NEWS, on pages 115 and 123 respectively, in the March 24 column.

In the Gulf Export Market, page 130 of the April 9 issue, price of 64-66, 375 e.p. gasoline in cases, cargo lots, should have been $2 instead of $2.05, as of April 7. It is corrected in this issue.

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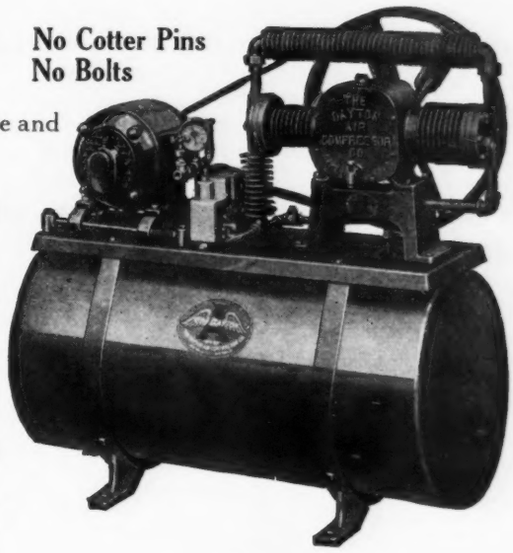

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Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in some states.)

	Prices Apr. 14	Prices Apr. 7	Prices Mar. 31
U. S. MOTOR GASOLINE			
New York harbor	†8.00 – 8.50	†7.75 – 8.50	†7.75 – 8.50
Portland district	*9.80	*9.30	*9.30
Boston district	*9.50	*9.00	*9.00
Providence district	*9.50	*9.00	*9.00
Philadelphia district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Baltimore district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Norfolk district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Charleston district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Savannah district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Jacksonville district	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	†8.50 – 9.00	†8.50 – 9.00	†8.50 – 8.75
Philadelphia district	8.50	8.50	8.25 – 8.50
Baltimore district	8.50	8.50	8.50
DOMESTIC AVIATION GASOLINE ‡(U. S. Gov't. specifications or better. Prices represent majority of quotations).			
New York harbor	11.50 –12.50	11.50 –12.50	.....
Philadelphia	11.50	11.50	.....
Baltimore	11.50 –12.50	11.50 –12.50	.....
Boston	11.50 –12.50	11.50 –12.50	.....
WATER WHITE KEROSENE			
New York harbor	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
Philadelphia district	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
Baltimore district	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
Boston district	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Boston district	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York Harbor	$1.15	$1.05	$1.05
Boston district	$1.15	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10

‡Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade.

*Minimum delivered. †Nominal. **Delivered prices.

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	Apr. 14	Apr. 7	Mar. 31
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	45.00 –47.00	45.00 –47.00	45.50 –47.00
600 D filtered	38.75 –40.00	38.75 –40.00	38.75 –40.00
600 Warren E filtered	35.00 –37.00	35.00 –37.00	35.00 –37.00
600 s.r. unfiltered	28.50 –29.50	28.50 –29.50	29.50 –31.00
650 s.r. unfiltered	35.00 –37.00	35.00 –37.00	36.00 –37.00
600 flash, s.r.	37.50 –40.00	37.50 –40.00	38.00 –40.00
630 flash, s.r.	42.50 –44.00	42.50 –44.00	43.00 –44.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00 –21.00	20.00 –21.00	20.00 –21.00
250 vis. No. 6 color	17.50 –18.50	17.50 –18.50	17.50 –18.50
200 vis. No. 6 color	16.50 –17.50	16.50 –17.50	16.50 –17.50
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.00 –24.00	23.00 –24.00	23.00 –24.00
180 vis. No. 3¼ color	19.00	19.00	19.00
100 vis. No. 2¼ color	15.50 –16.00	15.50 –16.00	15.50 –16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00	30.00	30.00
500 vis. No. 6½ color	26.50 –27.50	26.50 –27.50	26.50 –27.50
400 vis. No. 7¼ color	23.00 –25.00	23.00 –25.00	23.00 –25.00
300 vis. No. 6 color	20.00 –22.00	20.00 –22.00	20.00 –22.00
200 vis. No. 6 color	18.00 –20.00	18.00 –20.00	18.00 –20.00

Wax Markets

(Prices in cents per pound, A.S.T.M. tests; A.M.P. F.a.s. carload lots)

NEW YORK	Apr. 14	Apr. 7	Mar. 31
124-126 Yellow crude scale	2.50 – 2.625	2.50 – 2.625	2.625
122-124 White crude scale	2.625– 2.75	2.625– 2.75	2.625– 2.75
124-126 White crude scale	2.625– 2.75	2.625– 2.75	2.625– 2.75
123-125 Fully refined	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
125-127 Fully refined	3.625– 3.875	3.625– 3.875	3.625– 3.875
128-130 Fully refined	4.00	4.00	4.00 – 4.25
130-132 Fully refined	4.50	4.50	4.50
133-135 Fully refined	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
135-137 Fully refined	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
NEW ORLEANS			
124-126 Yellow crude scale	2.50 – 2.625	2.50 – 2.625	2.625
122-124 White crude scale	2.50 – 2.75	2.625– 2.75	2.625– 2.75
124-126 White crude scale	2.50 – 2.75	2.625– 2.75	2.625– 2.75
123-125 Fully refined	3.50	3.50	3.50
125-127 Fully refined	3.625– 3.75	3.625– 3.75	3.625– 3.75
128-130 Fully refined	3.875– 4.00	3.875– 4.00	3.875– 4.125
130-132 Fully refined	4.375	4.375	4.375
133-135 Fully refined	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted. Bulk gasoline and kerosene prices are posted quotations of the Export Petroleum Assoc., Inc., governing about 90% of the gasoline and kerosene shipped to foreign ports from the Gulf)

GASOLINE	Apr. 14	Apr. 7	Mar. 31
U. S. Motor	8.00	8.00	8.00
60-62, 400 e.p.	9.00	9.00	9.00
61-63, 390 e.p.	9.25	9.25	9.25
64-66, 375 e.p.	9.50	9.50	9.50
U. S. Motor, cases (cargoes)	$1.85	$1.85	$1.85
64-66, cases (cargoes)	$2.00	$2.00	$2.00
KEROSENE			
44 water white	7.00	7.00	7.00
41-43 prime white	6.00	6.00	6.00
Water white, cases (cargoes)	$1.75	$1.75	$1.75
Prime white, cases (cargoes)	$1.65	$1.65	$1.65
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
*30 plus translucent gas oil	3.875– 4.00	3.875– 4.00	3.875– 4.00
Grade C bunker oil	$1.05	$0.95	$0.95
Grade C bunker oil, cargoes	$0.75	$0.75	$0.70 –$0.75
MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.70	$0.70	$0.70 –$0.75
Grade C bunker oil for bunkering purposes, taxes paid	$1.00	$1.00	$1.00
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0. Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
200 vis. No. 3 unfiltered pale	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300 vis. No. 3 unfiltered pale	8.875– 9.50	8.875– 9.50	8.875– 9.50
500 vis. No. 3½ unfiltered pale	10.25 –11.25	10.25 –11.25	10.25 –11.25
750 vis. No. 4 unfiltered pale	12.50 –12.75	12.50 –12.75	12.50 –12.75
1200 vis. No. 5 unfiltered pale	16.00 –18.00	16.00 –18.00	16.00 –18.00
200 vis. No. 5-6 red oil	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
300 vis. No. 5-6 red oil	8.375– 8.50	8.375– 8.50	8.375– 8.50
500 vis. No. 5-6 red oil	9.25 – 9.50	9.25 – 9.50	9.25 – 9.50
750 vis. No. 5-6 red oil	11.50	11.50	11.50
1200 vis. No. 5-6 red oil	15.00 –15.25	15.00 –15.25	15.00 –15.25

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only.)

	Apr. 14	Apr. 7	Mar. 31
U. S. Motor gasoline	7.00 – 7.50	7.00 – 7.125	7.00 – 7.125
41-43 w.w. kerosene	5.875– 6.25	5.875– 6.25	5.875– 6.25
*26-32 translucent gas oil	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00

*Less than ½ of 1% sulphur.

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Apr. 14	Apr. 7	Mar. 31
Gasoline, U. S. Motor, 53-55 Gravity	6.00 – 7.00	6.00 – 7.00	6.00 – 7.00
Gasoline, U. S. Motor-blends and special cuts	7.25 – 10.00	7.25 –10.00	7.25 –10.00
Gas Oil, 30-34, per barrel	$0.80 –$1.05	$0.80 –$1.05	$0.80 –$1.05
Diesel Oil, 27 plus, per barrel	$0.75 –$1.00	$0.75 –$1.00	$0.75 –$1.00
Bunker oil, 14-18, per barrel	$0.65 –$0.85	$0.65 –$0.85	$0.65 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

†**Note:** Above Pacific Export market prices for gasoline and kerosene in cargo lots apply only on goods for coastwise shipment. Gasoline and kerosene prices for shipment to foreign ports are determined as follows: Difference in freight between U. S. Gulf to European Continent and California to European Continent —this difference plus 0.125c for handling, deducted from prices posted at U. S. Gulf by the Export Petroleum Assoc., Inc., which are above prices.

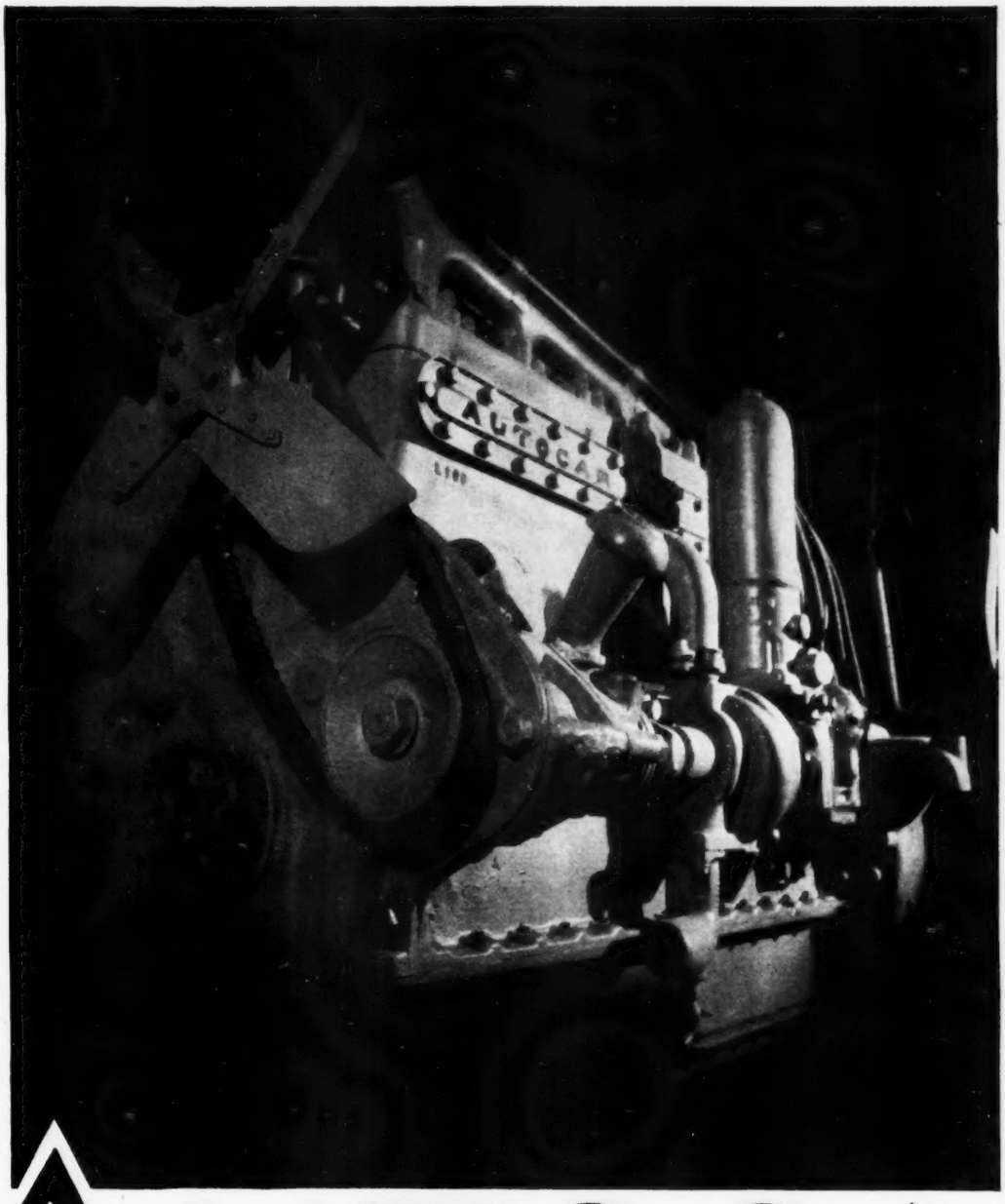
Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Apr. 14 Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	35-40	42/6
Gulf to U. K. or Continental ports*	26-28	30-32/6
North Atlantic to U. K. or Continental ports*	23/6-25	27-29/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.90-$1.00	$0.90-$1.00
Gulf to North Atlantic ports (not E. of N. Y.)**	40-45	35-40

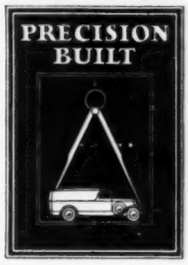
*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**Venezuela loading same rate. For Tampico 3c to 4c per bbl. additional.



AUTOCAR

presents The "BLUE-STREAK" SIX..



Greater rigidity, less vibration, better cooling, positive lubrication. A modern motor for today's increasingly heavy duty. Write for details.

AUTOCAR TRUCKS

The AUTOCAR Company, Ardmore, Pa., Established 1897

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect Apr. 14, 1930, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline Total T.W.	Tax	T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	14.5	2	16.5	18.5	13.5
Newark, N. J.	13.5	2	15.5	17.5	12.5
Annapolis	14	4	18	20	13
Baltimore, Md.	13.2	4	17.2	19.2	10.5
Cumberland, Md.	15	4	19	21	14
Washington, D. C.	13.7	2	15.7	17.7	12.7
Danville, Va.	14.8	5	19.8	21.8	13.8
Norfolk, Va.	13.3	5	18.3	20.3	11
Richmond, Va.	13.7	5	18.7	20.7	12.7
Roanoke, Va.	15	5	20	21	14
Petersburg, Va.	14.3	5	19.3	21.3	13.3
Charleston, W. Va.	14.5	4	18.5	20.5	12.5
Keyser, W. Va.	15.1	4	19.1	21.1	14.1
Parkersburg, W. Va.	13.2	4	17.2	19.2	11.2
Wheeling, W. Va.	14.4	4	18.4	20.4	12.4
Charlotte, N. C.	14.3	5	19.3	20.3	14.3
Hickory, N. C.	15.8	5	20.8	22.8	14.8
Mt. Airy, N. C.	15.5	5	20.5	22.5	14.5
Salisbury, N. C.	15.7	5	20.7	20.7	14.7
Charleston, S. C.	13.3	6	19.3	21.3	12.3
Columbia, S. C.	15.2	6	21.2	23.2	14.2

Note: 2c per gallon discount off t.w. price of gasoline to dealers and commercial consumers thru S. O. New Jersey territory.

CONTINENTAL OIL

Denver, Colo.	12	4	16	18	15.5
Pueblo, Colo.	14	4	18	19	15.5
Grand Junc., Colo.	18	4	22	25	19
Casper, Wyo.	14	4	18	21	14
Cheyenne, Wyo.	15.5	4	19.5	22.5	15.5
Butte, Mont.	18.5	5	23.5	26.5	20
Helena, Mont.	18.5	5	23.5	26.5	20
Salt Lake City, Utah	16.5	3½	20	20	17
Boise, Ida.	18.5	5	23.5	26.5	19
Twin Falls, Ida.	18.5	5	23.5	27.5	19
Albuquerque, N. M.	15	5	20	22	17

S. O. CALIFORNIA

			*Plant		
Phoenix, Ariz.	14	4	18	22	20
Los Angeles, Cal.	16.5	3	19.5	22.5	15.5
Fresno, Cal.	17	3	20	23	17
San Francisco, Cal.	17	3	20	23	15.5
Reno, Nev.	21	4	25	28	19
Portland, Ore.	15.5	4	19.5	22.5	16.5
Seattle, Wash.	15.5	3	18.5	21.5	16.5
Spokane, Wash.	19.5	3	22.5	25.5	20.5
Tacoma, Wash.	15.5	3	18.5	21.5	16.5

Note: 4c per gal. discount to dealers off t.w. price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only.

*Prices in the fourth column represent retail sale prices of gasoline for delivery into fuel tanks of customers' automotive equipment at S. O. California refineries, terminals and district depots as this company operates no retail service stations.

S. O. LOUISIANA

Little Rock, Ark.	12	5	17	18	13
Alexandria, La.	‡12	4	‡16	18	†14
Baton Rouge, La.	11	4	15	16	†14
Lake Charles, La.	††11	4	††15	††15	†14
New Orleans, La.	*11	4	*15	15	†12
Shreveport, La.	11	4	15	15	†14
Lafayette, La.	**13	4	**17	**19	†14
Bristol, Tenn.	14	5	19	21	14
Chattanooga, Tenn.	14	5	19	21	13
Knoxville, Tenn.	14	5	19	21	16
Nashville, Tenn.	13	5	18	20	16
Memphis, Tenn.	12	5	17	19	12.5

Note: 2c per gallon discount off t.w. price of gasoline to dealers thru S. O. Louisiana territory.

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

**Lafayette gasoline prices include 1c parish tax in addition to 4c state tax.

††Lake Charles gasoline prices include 1c parish tax.

‡Alexandria gasoline prices include 1c parish tax.

S. O. KENTUCKY

Ashland, Ky.	14	5	19	21	15
Catlettsburg, Ky.	14	5	19	21	15
Lexington, Ky.	13	5	18	20	14.5
Louisville, Ky.	14	5	19	21	13
Covington, Ky.	14	5	19	20	14.5
Clarksdale, Miss.	13	5	18	20	12.5
Gulfport, Miss.††	15.5	5	20.5	22.5	13
Jackson, Miss.	14	5	19	21	13
Natchez, Miss.	13.5	5	18.5	20.5	13
Vicksburg, Miss.	13.5	5	18.5	20.5	13
Birmingham, Ala.‡‡	16	4	20	22	14.5
Mobile, Ala.‡	13	4	17	17	13.5
Montgomery, Ala.*	16	4	20	22	15
Atlanta, Ga.	14	6	20	22	†15.5
Augusta, Ga.	13	6	19	21	†15.5
Macon, Ga.	13	6	19	21	†14
Savannah, Ga.	14	6	20	22	†14
Jacksonville, Fla.	14	6	20	22	14
Miami, Fla.	15	6	21	23	14
Tampa, Fla.	14	6	20	22	13
Pensacola, Fla.**	12	6	18	20	13.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax.

S. O. NEBRASKA

Omaha, Neb.	15.25	4	19.25	21.25	13.25
McCook	16.75	4	20.75	22.75	14.75
Norfolk	15.75	4	19.75	21.75	13.75
North Platte	16.75	4	20.75	22.75	14.50
Scottsbluff	16.75	4	20.75	22.75	14.25

S. O. INDIANA

Chicago, Ill.	15	3	18	19	13
Decatur, Ill.	15.2	3	18.2	19.2	13.1
E. St. Louis, Ill.	14.4	3	17.4	18.4	12.2
Joliet, Ill.	15.4	3	18.4	19.4	13.3
Peoria, Ill.	15.2	3	18.2	19.2	13.1
Quincy, Ill.	15.2	3	18.2	19.2	12.9
Indianapolis, Ind.	15.2	4	19.2	20.2	14.2
Evansville, Ind.	15	4	19	20	14
South Bend, Ind.	15.4	4	19.4	20.4	14.4
Detroit, Mich.	15.8	3	18.8	19.8	14.7
Grand Rapids, Mich.	15.7	3	18.7	19.7	14.6
Saginaw, Mich.	15.9	3	18.9	19.9	14.8
Green Bay, Wisc.	15.6	2	17.6	18.6	13.4
Madison, Wisc.	15.3	2	17.3	18.3	13.1
Milwaukee, Wisc.	15.1	2	17.1	18.1	12.9
La Cross, Wisc.	16.2	2	18.2	19.2	14
Minneapolis, Minn.	16.2	3	19.2	20.2	13.9
Duluth, Minn.	16.5	3	19.5	20.5	13.9
Mankato, Minn.	16.1	3	19.1	20.1	13.7
Des Moines, Ia.	15.5	3	18.5	19.5	13.3
Davenport, Ia.	15.5	3	18.5	19.5	13.3
Sioux City, Ia.	15.1	3	18.1	19.1	12.9
Mason City, Ia.	15.5	3	18.5	19.5	13.3
St. Louis, Mo.	*14.9	2	16.9	17.9	12.3
Kansas City, Mo.	†15.9	2	17.9	18.9	11.6
St. Joseph, Mo.	†15.5	2	17.5	18.5	12.2
Fargo, N. D.	17.9	3	20.9	21.9	15.9
Grand Forks, N. D.	18.2	3	21.2	22.2	16.2
Minot, N. D.	17.9	3	20.9	21.9	15.9
Pierre, S. D.	16	4	20	21	14.4
Huron, S. D.	16.3	4	20.3	21.3	14.7
Wichita, Kans.	13.8	3	16.8	14.8	11.8
Bartlesville, Okla.	13.5	4	17.5	18.5	11.5

S. O. Indiana's quantity contract price schedule thru territory (except in Chicago and Detroit, which see below) on tank truck deliveries of gasoline, figured from the service station price is 2c for 500 gals. or more a month; 2½c for 2,000 gals. or more a month; 3c for 6,000 gals. or more a month; and 4½c for 100,000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price; over 50,000 gals. per month, 4½c per gal. off s.s. price; over 75,000 gals., 5c off.

In Detroit, dealers and consumers signing contract for all gasoline for one year, get 4c per gal. off s.s. price. Non-contracted accounts get 3c off s.s. price. Those buying 100,000 gals. or more a month, 4½c per gal. off s.s. price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Ohio state-wide	15	4	19	20	13
†Darke, Hancock, Preble and Scioto Counties	14	4	18	18	†13
Athens County	12	4	16	16	13

Note: Discount to dealers and commercial accounts generally thru Ohio is 2c per gal. off t.w. price with some exceptions. In counties where prices are below normal, discount is 3c per gal. off t.w. price.

†Kerosene t.w. price in Darke County is 11c; in Paulding County 12c.

MAGNOLIA PETROLEUM

Muskogee, Okla.	12	4	16	19	10
Oklahoma City	11	4	15	18	10
Tulsa, Okla.	11	4	15	19	10
Fort Smith, Ark.†	11	†4	15	17	12
Little Rock, Ark.	12	5	17	17	13
Texarkana, Ark.*	10	*4	14	16	12
Dallas, Tex.	12	4	16	20	12
Fort Worth, Tex.	12	4	16	19	12
Houston, Tex.	11	4	15	19	11
San Antonio, Tex.	11	4	15	19	11
El Paso, Tex.	12	4	16	20	13

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	13.3	2	15.3	17.3	11.3
Borough of Richmond	13.7	2	15.7	17.7	11.7
Albany, N. Y.	14.6	2	16.6	18.6	12.6
Buffalo, N. Y.	12.8	2	14.8	16.8	11.8
Rochester, N. Y.	13	2	15	17	12
Syracuse, N. Y.	12.8	2	14.8	16.8	12.8
Boston, Mass.	13.5	2	15.5	17.5	11.5
Augusta, Me.	14.8	4	18.8	20.8	12.8
Manchester, N. H.	14.4	4	18.4	20.4	12.4
Burlington, Vt.	15.3	4	19.3	21.3	13.3

Latest Changes in Tank Wagon Prices

Gasoline

S.O. New Jersey—S.s. only cut 1c, Roanoke, to 21c, t.w. remaining unchanged at 20c, **April 8.**

S.O. New York—T.w. and s.s. up 1c thru territory, **April 9.**

Atlantic Refining—T.w. and s.s. up 1c thru New England to meet S.O. New York's advance **April 9.**

S.O. Ohio—T.w. and s.s. up 1c thru Ohio, **April 12.**

S.O. Indiana—T.w. and s.s. up 1c thru territory including Rocky Mountain marketing territory of Midwest Refining Co., excepting Colorado, Wyoming and Montana, **April 12.**

S. O. Kentucky—T.w. and s.s. cut 2c, Macon, to 19c and 21c respectively, **April 8.**

S.O. Louisiana—T.w. cut 1c, s.s. 3c, Lake Charles, both to 15c, **April 4.**

S.s. only cut 2c, Shreveport, to 15c, same as t.w., **April 5.**

T.w. up 1c, s.s. 2c, Little Rock, to 17c and 18c, **April 10.**

S.s. only up 1c, Knoxville and Chattanooga, to 21c, t.w. remaining unchanged at 19c, **April 10.**

S.O. Nebraska—T.w. and s.s. up 1c thru Nebraska **April 12.**

Canada—T.w. and s.s. cut 2c, Nova Scotia, New Brunswick and Prince Edward Island, to 25c and 29c, **April 3.**

T.w. and s.s. gasoline up 2c, Saskatchewan, covering increase in gasoline provincial tax to 5c, **April 1.**

Kerosene

S.O. Ohio—Kerosene up 1c thru Ohio, **April 12.**

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Florida, 1/8c on both; Georgia, 1/10c on both; Illinois, 3/100c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only, per gallon; Iowa 7/100c; Michigan 1/5c to 4/5c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect Apr. 14, 1930

S. O. NEW YORK

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
New Haven, Conn.	14.6	2	16.6	18.6	12.6
Providence, R. I.	13.7	2	15.7	17.7	11.7

Note: S. O. New York allows 3c off t.w. price to dealers in New York City, and 2c off t.w. price thru rest of territory.

ATLANTIC REFINING

Pittsburgh, Pa.	15	*	15	21	13
Philadelphia, Pa.	15	*	15	21	13
Allentown, Pa.	15	*	15	21	13
Erie, Pa.	15	*	15	19	13
Scranton, Pa.	15	*	15	21	13
Altoona, Pa.	15	*	15	21	13
Dover, Del.	15	3	18	20	13
Wilmington, Del.	15	3	18	20	13
Boston, Mass.	13.5	2	15.5	17.5	11.5
Springfield, Mass.	14.5	2	16.5	18.5	12.5
Worcester, Mass.	14.3	2	16.3	18.3	12.3
Fall River, Mass.	14.1	2	16.1	18.1	12.1
Providence, R. I.	13.7	2	15.7	17.7	11.7
Hartford, Conn.	14.5	2	16.5	18.5	12.5
New Haven, Conn.	14.6	2	16.6	18.6	12.6
Atlantic City, N. J.	14.5	2	16.5	18.5	13.5
Canden, N. J.	13.6	2	15.6	17.6	12.6
Trenton, N. J.	14	2	16	18	13
Annapolis, Md.	14	4	18	20	13
Baltimore, Md.	13.2	4	17.2	19.2	10.5
Hagerstown, Md.	14.7	4	18.7	20.7	13.7
Richmond, Va.	13.7	5	18.7	20.7	12.7
Wilmington, N. C.	13.4	5	18.4	20.4	12.4
Brunswick, Ga.	14	6	20	22	**15
Jacksonville, Fla.	14	6	20	22	14

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics.

*4-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.7	17
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	**20.7	**22.2	**24
St. Louis	15.6	17.1	18.9
New York		16	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)

New York harbor	11.00
Philadelphia district	11.00
Providence	11.50

Tank Wagon or Steel Barrels

New York City	18
Syracuse	17–18
Rochester	18
Buffalo	17–18
Providence	19
Boston	19
Bridgeport	16–18
Newark	18
Philadelphia	16
Baltimore	18

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Toronto	19.5	5	24.5	28	20.5
Ottawa	19.5	5	24.5	28	20.5
North Bay	22.5	5	27.5	33	27
Ft. William	22.5	5	27.5	31	22.5
Border Cities, including Windsor	18.5	5	23.5	27	19.5
MANITOBA					
Winnipeg	21.5	3	24.5	28	21.5
SASKATCHEWAN					
Regina	26	5	31	35	26
ALBERTA					
Edmonton	27.5	5	32.5	36	27.5
Calgary	23.5	5	28.5	32	23.5
BRITISH COLUMBIA					
Vancouver	23	5	28	32	24
QUEBEC					
Montreal	20.5	5	25.5	29	21.5
Quebec City	21.5	5	26.5	30	22.5
Three Rivers	21.5	5	26.5	30	22.5
NEW BRUNSWICK					
St. John	20	5	25	29	24
Moncton	20	5	25	29	24
NOVA SCOTIA					
Halifax	20	5	25	29	24
PRINCE EDWARD ISLAND					
Charlottetown	20	5	25	29	24

Note: In districts surrounding these points 1c additional is added to city price.

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CYLINDER — ENGINE — CORDAGE

Gulf Refining Company

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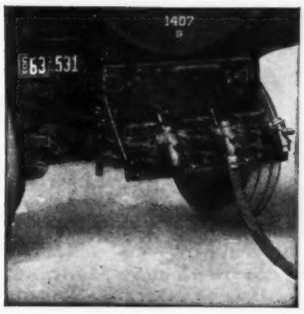
PITTSBURGH, PA.

District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans



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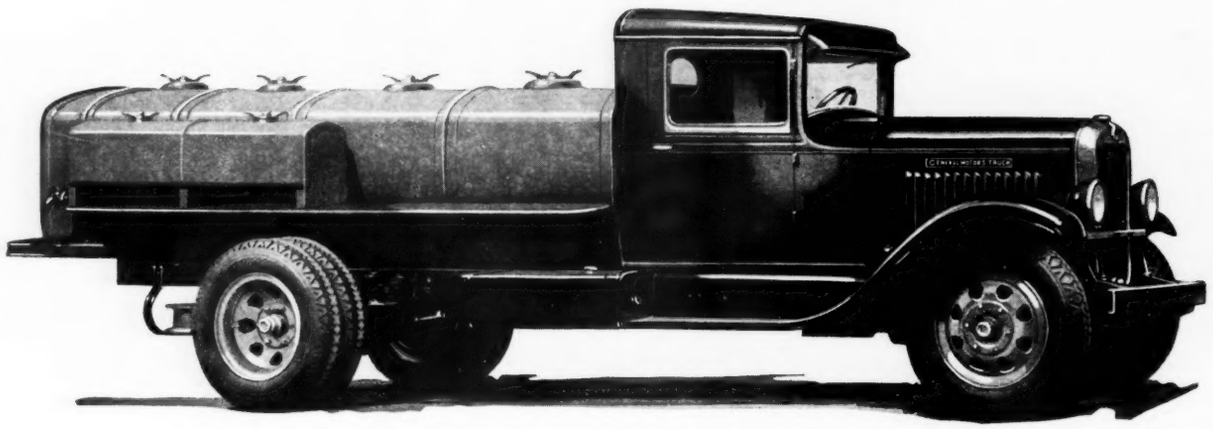

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Model T-44 B

Price, chassis only, F. O. B. Pontiac, Mich.

THIS rugged, powerful unit is available in four different wheelbases —141", 152" (illustrated), 164" and 181" —and 12 different tire combinations. Chassis prices vary according to wheelbase and tire equipment. Straight Rating—15,000 lbs.—including load.

WHEREVER there are loads in the 3-TON Range to be moved at sustained high speed, the General Motors Truck, Model T-44, is *the* truck for the job.

The great 6-cylinder engine, famed for its operating economy and long life, gives it unusual cruising range.

Put it on the toughest job you've got—and this truck will lick it and *keep it licked for years.* A hundred thousand miles from now it will still be delivering modern economical service, day in and day out.

Throughout its construction there is brute ruggedness . . . extra margins of strength in the burly frame which has five husky cross members—with a "stress absorber" spreading shocks at the point of maximum strain . . . big, long rear springs, with auxiliary springs providing easier riding throughout the entire load range, and counteracting sidesway . . . an exceptionally sturdy rear axle that stands the gaff . . . 4 speed transmission of proved durability . . . quick-acting, 4 wheel brakes, simple to adjust . . . a rugged simple clutch . . . easy steering and unusually short turning radius . . . roomy comfortable driver's compartment . . . quiet, weather-tight cab.

It all adds up to tremendous value that can't be touched in the three-ton range. *It's certainly worth seeing and investigating!*

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Crude Oil Prices (in Effect April 14, 1930)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)
(All Penna. Grade Crude Effective Feb. 17, 1930)
†Bradford—Alleghany district $3.00
Bradford District Oil in New York Transit Lines (Bradford District) ..... ††$2.75
Bradford District Oil in National Transit Lines (Bradford District) ..... ††2.75
Penna. Grade Oil in National Transit Lines (Other Pennsylvania) *2.80
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania) 2.75
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) 2.65
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district) 2.45
Wayne district crude in Cumberland lines (West Virginia) (Effective Apr. 11, 1930) ... 1.34
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective Feb. 17, 1930) 1.65
Corning, O., heavy grade (Effective Feb. 17, 1930) 1.55
Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective Apr. 11, 1930) 1.47
Somerset Oil in Eureka Pipe Lines (Effective Apr. 11, 1930) 1.31
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 29, 1929) $0.60

*Oil run prior to July 1, 1929 is $2.75 per bbl.
†Posted by Tide Water Pipe Co., Ltd.
††Oil run prior to July 1, 1929 is $2.70 per bbl.

(Posted by Stoll Oil Refining Co.)
Oil City, Ky., oil in Stoll lines (Effective Feb. 19, 1930) $1.45

MICHIGAN
(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon):			
32-32.9	$1.08	39-39.9	$1.29
33-33.9	1.11	40-40.9	1.32
34-34.9	1.14	41-41.9	1.35
35-35.9	1.17	42-42.9	1.38
36-36.9	1.20	43-43.9	1.41
37-37.9	1.23	44 and above	1.44
38-38.9	1.26		

(Posted by Pure Oil Co.)
Midland, Midland County $1.25

CENTRAL STATES FIELDS
Posted by Ohio Oil Co.
Effective Apr. 11, 1930

Wooster	$1.80	Princeton	$1.65
Lima	1.70	Illinois	1.65
Waterloo	1.20	Plymouth	1.23
Indiana	1.47	West Kentucky	1.55

CANADIAN CRUDE
Posted by Imperial Oil Refineries, Ltd.
Petrolia $2.10
Oil Springs 2.17

OKLAHOMA, KANSAS and NORTH TEXAS
Prices of Prairie Oil & Gas Co.
(In Oklahoma and Kansas)
Effective Apr. 10, 1930

Below 25	$0.75	35-35.9	$1.255
25-25.9	0.80	36-36.9	1.29
26-26.9	0.85	37-37.9	1.325
27-27.9	0.90	38-38.9	1.36
28-28.9	0.95	39-39.9	1.395
29-29.9	1.00	40-40.9	1.43
30-30.9	1.05	41-41.9	1.465
31-31.9	1.10	42-42.9	1.50
32-32.9	1.15	43-43.9	1.535
33-33.9	1.185	44 and above	1.57
34-34.9	1.22		

(In North Texas: Ranger, Wichita Falls, Mexia)
Effective Apr. 10, 1930

Below 25	$0.72	30-30.9	$1.02
25-25.9	0.77	31-31.9	1.07
26-26.9	0.82	32-32.9	1.12
27-27.9	0.87	33-33.9	1.17
28-28.9	0.92	34-34.9	1.22
29-29.9	0.97	35-35.9	1.255
36-36.9	$1.29	41-41.9	$1.465
37-37.9	1.325	42-42.9	1.50
38-38.9	1.36	43-43.9	1.535
39-39.9	1.395	44 and above	1.57
40-40.9	1.43		

The Texas Co., same schedule in North Texas, North Central Texas and Central Texas as Prairie and Humble in North Texas, effective Apr. 10.

Humble Oil & Refining Co. Prices
(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)
Humble's prices in above fields same as Prairie's prices in North Texas, effective Apr. 10, which see.

Magnolia Petroleum Co.
(In Oklahoma, Kansas and North and East Central Texas)

Below 26	$0.70	28-28.9	$0.88
26-26.9	0.76	29-29.9	0.95
27-27.9	0.82	30-30.9	1.02

Rest of Magnolia schedule up to 44 and above same as Prairie in Oklahoma and Kansas.
Apr. 10, 1930, Glasscock, Crane, Upton, Winkler, Howard and Mitchell Counties same prices as Humble's postings in Winkler, Crane, etc., which see

Corsicana heavy	$0.80
Luling	0.85
Mirando	0.85
Darst Creek, 60° F. gravity	1.15

Carter Oil Co.
(Oklahoma and Kansas)
Apr. 10, 1930, same schedule as Prairie, which see.

PANHANDLE TEXAS
Humble Oil & Refining Co.
Effective Apr. 10, 1930

Hutchinson and Carson Counties:			
Below 32	$0.775	38-38.9	$1.065
32-32.9	0.825	39-39.9	1.10
33-33.9	0.875	40-40.9	1.135
34-34.9	0.925	41-41.9	1.17
35-35.9	0.96	42-42.9	1.205
36-36.9	0.995	43-43.9	1.24
37-37.9	1.03	44 and above	1.275
Gray County:			
Below 29	$0.755	37-37.9	$1.16
29-29.9	0.805	38-38.9	1.195
30-30.9	0.855	39-39.9	1.23
31-31.9	0.905	40-40.9	1.265
32-32.9	0.955	41-41.9	1.30
33-33.9	1.005	42-42.9	1.335
34-34.9	1.055	43-43.9	1.37
35-35.9	1.09	44 and above	1.405
36-36.9	1.125		

Wheeler County: Posted by Magnolia Pet. Co. Humble withdrew Wheeler county postings Apr. 10.

Below 30	$0.755	37-37.9	$1.11
30-30.9	0.805	38-38.9	1.145
31-31.9	0.855	39-39.9	1.18
32-32.9	0.905	40-40.9	1.215
33-33.9	0.955	41-41.9	1.25
34-34.9	1.005	42-42.9	1.285
35-35.9	1.04	43-43.9	1.32
36-36.9	1.075	44 and above	1.355

Above prices met by The Texas Co. and Magnolia on Apr. 10.

WEST TEXAS AND NEW MEXICO
Humble Oil & Refining Co.
Effective Apr. 10, 1930

Winkler, Crane, Upton, Crockett, Ector, and Pecos Counties, also Lea County, N. Mex.			
Below 25	$0.65	31-31.9	$0.86
25-25.9	0.68	32-32.9	0.89
26-26.9	0.71	33-33.9	0.92
27-27.9	0.74	34-34.9	0.95
28-28.9	0.77	35-35.9	0.98
29-29.9	0.80	36 and above	1.01
30-30.9	0.83		

Howard and Glasscock counties:
Effective Apr. 10, 1930

Below 25	$0.65	31-31.9	$0.82
25-25.9	0.68	32-32.9	0.84
26-26.9	0.71	33-33.9	0.86
27-27.9	0.74	34-34.9	0.88
28-28.9	0.76	35-35.9	0.90
29-29.9	0.78	36 and above	0.92
30-30.9	0.80		

Apr. 10, 1930, The Texas Co. posted same prices in Crane, Upton, Winkler and Lea counties as Humble.

SOUTH AND SOUTHWEST TEXAS
(Posted by Humble Oil & Refining Co.)
Effective Apr. 10, 1930

Mirando	$0.85
Salt Flat	1.15
Darst Creek	1.15
Pettus, Bee County	1.40

NORTH LOUISIANA—ARKANSAS FIELDS
Prices of Standard Oil Co. of Louisiana
Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto, and Sabine.
Effective Apr. 11, 1930

Below 28	$0.87	36-36.9	$1.29
28-28.9	0.92	37-37.9	1.325
29-29.9	0.97	38-38.9	1.36
30-30.9	1.02	39-39.9	1.395
31-31.9	1.07	40-40.9	1.43
32-32.9	1.12	41-41.9	1.465
33-33.9	1.17	42-42.9	1.50
34-34.9	1.22	43-43.9	1.535
35-35.9	1.255	44 and above	1.57

Cotton Valley, Sarepta and Carterville below 36 $0.85. Rest of schedule same as Caddo, Homer, etc.

Smackover, below 24	$0.90
do 24 and above	1.05
Bellevue (Apr. 11, 1930)	1.15
*Urania, La. (Apr. 11, 1930)	0.95
†East El Dorado (Calion) (Apr. 11, 1930)	0.90

*Posted by Louisiana Oil Refining Corp.
†Posted by Magnolia Petroleum Co.
Apr. 10, 1930, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.67; 25-25.9, $0.72; 26-26.9, $0.77; 27-27.9, $0.82.
Apr. 11, Magnolia met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS
Lousiana Oil Refining Corp., and Atlantic Oil Producing Co.
Effective Apr. 11, 1930

Below 28	$0.76	30-30.9	$0.91
28-28.9	0.81	31-31.9	0.96
29-29.9	0.86	32 and above	1.01

GULF COASTAL
Posted by Humble Oil & Refining Co.
Effective Apr. 10, 1930

Grades A	$1.15	34-34.9	$1.30
Grades B:		35-35.9	1.33
Below 25	1.00	36-36.9	1.36
25-25.9	1.03	37-37.9	1.39
26-26.9	1.06	38-38.9	1.42
27-27.9	1.09	39-39.9	1.44
28-28.9	1.12	40-40.9	1.46
29-29.9	1.15	41-41.9	1.48
30-30.9	1.18	42-42.9	1.50
31-31.9	1.21	43-43.9	1.52
32-32.9	1.24	44 and above	1.54
33-33.9	1.27		

Refugio county (rest of schedule, same as Grades B, which see above).

Below 25	$0.85
25-25.9	1.03

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Humble, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.
Specifications for Grade "A" crude: Gravity: 25° and below, at 60° F; Viscosity: not less than 100 seconds at 100° F Saybolt.
Sulfur: not over .4%.
Grade "B" includes all Coastal crude which does not meet the test for "A" grades.

Crude Price Changes

OIL CITY, Pa.,—On April 11 Joseph Seep Purchasing Agency advanced both grades of Somerset, Ky. crude and Wayne district crude in West Virginia 10 cents per barrel, making new prices for Somerset in Cumberland lines, $1.47; Somerset in Eureka lines, $1.31; and Wayne district, $1.34 per barrel at wells.

* * *

FINDLAY, O.—On April 11 Ohio Oil Co. advanced Wooster, Lima, Indiana, Illinois, Princeton, Plymouth and Western Kentucky crudes five cents per barrel. New prices are: Wooster, $1.80; Lima, $1.70; Illinois and Princeton, $1.65; Plymouth, $1.23; and Western Kentucky, $1.55. Last previous change on Central States crude was a 10 to 18 cent cut on Feb. 15.

* * *

INDEPENDENCE, Kans.—On April 10 Prairie Oil & Gas Co. posted new prices for Oklahoma, Kansas and North Texas crude, posting for the first time separate price schedules for Oklahoma-Kansas crude and for North Texas crude, for oils testing below 34 gravity. Grades testing 34 gravity and above, however, take the same prices in all three states.

Prairie advanced Oklahoma-Kansas crude from 7 to 14 cents, and North Texas (Ranger, Wichita Falls and Mexia) crudes from 4 to 13 cents.

Its differential on Oklahoma-Kansas crudes for grades below 33 gravity was changed to 5 cents, and from 33 gravity upward, to 3½ cents. That differential was formerly 6 cents for

(Continued on Page 138)

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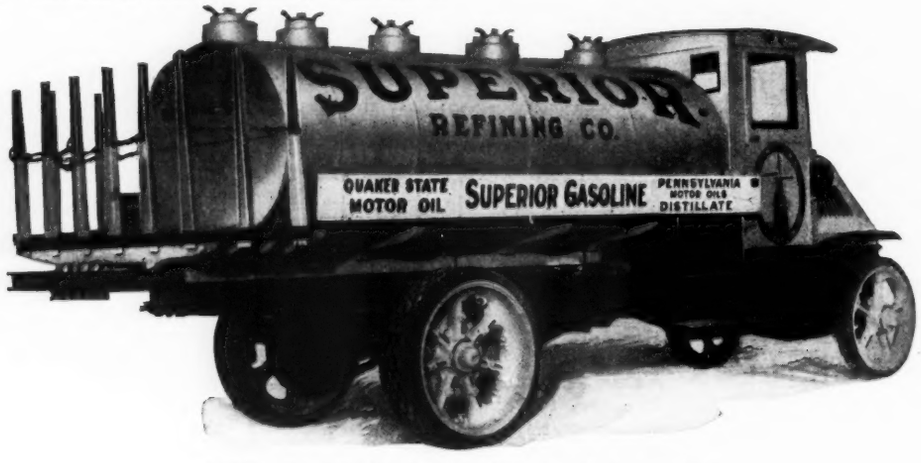

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Other equipment on which you may send prices.....

Name..... **Address**.....

Crude Oil Prices (in Effect April 14, 1930)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective Apr. 10, 1930

Grades A	$1.15	*Grades B	$1.00
‡Grades B (light crude)			
35-35.9	$1.33	40-40.9	$1.46
36-36.9	1.36	41-41.9	1.48
37-37.9	1.39	42-42.9	1.50
38-38.9	1.42	43-43.9	1.52
39-39.9	1.44	44 and above	1.54

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Apr. 10, 1930)

‡Salt Creek 29-29.9	$1.00
" " 30-30.9	1.05
" " 31-31.9	1.10
" " 32-32.9	1.15
" " 33-33.9	1.185
" " 34-34.9	1.22
" " 35-35.9	1.255
" " 36-36.9	1.29
" " 37 and above	1.325
Elk Basin	1.55
Grass Creek light	1.55
Big Muddy	$1.38
Lance Creek	1.63
Rock Creek	1.35
Mule Creek	1.20
Rex Lake	1.10
‡Osage	1.63
‡Cat Creek, Mont.	1.55
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.40
Artesia, N. Mex.	1.05

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

(Effective March 11, 1930)

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach Inglewood* Olinda-Brea Canon*	Athens Rosecrans Dominguez	Elwood Terrace	Torrance Richfield	Whittier La Habra	Montebello	Coyote	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills Buena Vista Hills Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Orcutt (Santa Maria) (Union Oil Co.)	Santa Paula (Ventura) (Union Oil Co.)	Ventura Avenue (Associated Oil Co.)
14-14.9**	$0.70	....	....	$0.70	$0.70	$0.70	$0.70	....	$0.55	$0.55	$0.55	$0.55	....	$0.55	$0.70	$0.70
15-15.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55		.55	.70	.70
16-16.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	$1.65	.55	.70	.70
17-17.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	for	.55	.70	.70
18-18.9	.76	....		.76	.76	.71	.76	....	.55	.62	.62	.62	55°	.65	.75	.76
19-19.9	.82	....		.82	.82	.77	.82	....	.55	.70	.70	.70	gravity	.70	.80	.82
20-20.9	.88	....		.88	.87	.83	.87	....	....	.78	.78	.78	and	.78	.85	.88
21-21.9	.94	....		.94	.93	.90	.93	.92	....	.86	.86	.86	over	.90	.90	.91
22-22.9	1.00	....	....	1.00	.98	.97	.98	.95	....	.94	.94	.94	....	.95	.97	.94
23-23.9	1.07	....	....	1.07	....	1.05	1.04	1.01	....	1.02	1.02	1.02	....	1.02	1.05	1.00
24-24.9	1.14	1.14	....	1.14	....	1.11	1.10	1.07	....	1.09	1.07	1.07	....	1.10	1.08	1.07
25-25.9	1.21	1.19	....	1.21	....	1.17	1.16	1.13	....	1.16	1.12	1.12	....	1.18	1.13	1.14
26-26.9	1.28	1.24	....	1.28	....	1.23	1.23	1.19	....	1.23	1.17	1.17	....	1.26	1.18	1.21
27-27.9	1.35	1.29	....	1.35	....	1.29	1.30	1.25	....	1.30	1.23	1.22	....	....	1.23	1.28
28-28.9	1.42	1.34	....	1.42	....	1.35	1.37	1.31	....	1.35	1.27	....	....	....	1.28	1.35
29-29.9	1.46	1.39	....	†1.46	....	1.38	1.41	1.37	....	1.41	1.31	....	....	....	1.33	1.39
30-30.9	1.50	1.45	....	†1.50	....	1.41	1.45	1.43	....	1.47	1.35	....	....	....	1.39	1.43
31-31.9	1.55	1.51	....	....	....	....	....	1.49	....	1.53	1.39	....	....	....	1.45	1.48
32-32.9	1.60	1.57	....	....	....	....	....	1.55	....	1.59	1.43	....	....	....	1.51	1.53
33-33.9	....	1.64	....	....	....	....	....	1.60	....	1.65	1.47	....	....	....	1.58	1.59
34-34.9	....	1.71	1.32	....	....	....	....	1.65	....	††1.71	1.51	....	....	....	....	1.65
35-35.9	....	1.78	1.39	....	....	....	....	1.70	....	††1.77	1.55	....	....	....	....	1.71
36-36.9	....	1.84	1.46	....	....	....	....	1.75	....	....	....	....	....	....	....	....
37-37.9	....	1.90	1.53	....	....	....	....	1.80	....	....	....	....	....	....	....	....
38-38.9	....	1.96	1.60	....	....	....	....	1.85	....	....	....	....	....	....	....	....
39-39.9	....	2.02	1.66	....	....	....	....	1.90	....	....	....	....	....	....	....	....
40-40.9	....	2.08	1.72	....	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	2.14	1.78	....	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	2.20	1.84	....	....	....	....	....	....	....	....	....	....	....	....	....

*Inglewood prices run only to 28.9 gravity; Olinda-Brea Canon to 31.9 gravity.
†Richfield crude only. ††These two grades apply on Lost Hills only.
**Standard does not contract for crude testing below 14 gravity, but pays 45c per barrel when purchased

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Apr. 14	Apr. 7
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$1.00-1.05	$1.00-1.05
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks. lb.	3.50-5.00	3.50-5.00

Compounders' Supplies

	Apr. 14	Apr. 7
Vegetable Oils		
Linseed carloads, spot lb.	14.20	14.20
Tanks, spot	13.40	13.40
Soya Bean, Tank, coast, lb.	9.00-9.50	9.00-9.50
Oleic Acid		
Distilled, tanks lb.	9.25-9.50	9.25-9.50
Distilled, bbls. lb.	10.125-10.375	10.125-10.375
Saponified, tanks lb.	9.25	9.25
Saponified, bbls. lb.	10.125-10.625	10.125-10.625
Lard Oils		
Prime Winter Strained lb.	13.25	13.25
Extra Winter Strained lb.	11.75	12.00
Extra lb.	11.50	11.50
Extra No. 1 lb.	11.00	11.00
No. 1 lb.	10.50	10.50
No. 2 lb.	10.25	10.25
Tallow oil lb.	10.00	10.00
Neatsfoot Oil		
Pure, bbls. lb.	13.00	13.00
Extra, bbls. lb.	11.25	11.25
No. 1 bbls. lb.	11.00	11.00
Cold Pressed lb.	17.50	17.50
Fish Oils		
Menhaden Oil		
Light Pressed gal.	63-65	63-65
Light Pressed, tank cars, N. Y. gal.	53	53
White bleached gal.	67	67
Yellow bleached gal.	61	61
Whale, extra winter bleached, gal.	85	85
Naval Stores		
Steam, distilled turpentine, N. Y. gal.	51	51
Steam distilled turpentine, Savannah gal.	45	45
Gum turpentine, N. Y. gal.	56.50	56.50
Gum turpentine, f.o.b. cars Savannah gal.	53	53
Wood Rosin, N.Y. gal.	$7.30	$7.30
Wood Rosin F, Savn'h. bbl.	$6.50	$6.50
Gum Rosin B, N. Y. bbl.	$7.60	$7.60
Gum Rosin B, f.o.b. cars Savannah bbl.	$6.50	$6.50
Rosin oil, pure gal.	58	58
Rosin oil, compounded gal.	58	58
Pine Tar		
Kiln burnt bbl.	$13.00-14.00	$13.00-14.00
Retort bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	51-55	51-55

Crude Price Changes

(*Continued from Page* 135)

the lower grades and 3 cents for the higher grades.

The differential for North Texas grades was made 5 cents for oil below 35 gravity, and from 35 gravity upward, 3½ cents.

* * *

Thus the Prairie schedule conforms to that of the Carter Oil Co. in Oklahoma and Kansas fields and to that of the Humble Oil & Refining Co. in North Texas, which were announced previous to the Prairie changes.

Prairie's schedule in Oklahoma-Kansas begins with below 25 gravity at 75 cents; 25-25.9, 80 cents; with 5 cents additional for each succeeding degree of gravity up to 32-32.9 which is $1.15; with 3½ cents differential from 33-33.9 gravity, which is $1.85; up to maximum grade of 44 and above, which is $1.57.

Prairie's schedule in North Texas, begins with below 25 gravity at 72 cents; 25-25.9, 77 cents; with 5 cents additional for each succeeding degree of gravity up to 34-34.9 gravity, which is $1.22; and 3½ cents additional for each grade upward, with 35-35.9 at $1.255 and maximum grade of 44 and above at $1.57.

Last previous change by Prairie on Mid-Continent crude was a reduction from 17 to 41 cents a barrel on Feb. 15.

* * *

TULSA—On April 10 Carter Oil Co. made the initial advance on Oklahoma-Kansas crude, by posting 80 cents for 25-25.9 gravity with 5 cents additional for each succeeding degree of gravity, to and including 32-32.9, which is $1.15; and 3½ cents additional for each gravity upward, making 44 and above $1.57.

* * *

HOUSTON—On April 10 Humble Oil & Refining Co. took the lead in advancing all North Texas crudes which it buys on a gravity basis, in amounts ranging from 4 to 13 cents. These fields include Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes. It posted 72 cents per barrel for oil below 25 gravity, with 5 cents additional for each succeeding degree of gravity up to and including 34-34.9, which is $1.22; and 3½ cents additional from 35-35.9 gravity upward, up to maximum grade of 44 and above, which is $1.57.

The Humble also advanced all other crudes it buys in Texas and New Mexico, including Panhandle crude, excepting Wheeler county where it discontinued postings; Gray county was advanced in amounts ranging from 2.5 to 11.5 cents; Carson and Hutchinson counties, from 4.5 to 13.5 cents.

All West Texas crudes were advanced 10 cents, as were southwest Texas and Gulf Coastal crudes. The West Texas crudes include Winkler, Crane, Upton, Crockett, Ector, Pecos, Howard and Glasscock counties. Lea county, N. M., is included in these postings.

Southwest Texas crudes include Mirando, Salt Flat, Darst Creek and Pettus.

Gulf Coast crudes include Refugio county, Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling Humble Pierce Junction Sugarland and Raccoon Bend.

* * *

NEW YORK.—On April 10 The Texas Co. met Humble's price schedule in north, north central and central Texas, in the Texas Panhandle, in West Texas and New Mexico and in the Gulf Coast fields. It followed the Carter postings in Oklahoma except that the Texas Co. posts oil below 25 gravity at 75 cents.

The Texas Co. extended its North Texas price schedule into North Louisiana where it purchases on a gravity basis. This advance was later met by the Standard Oil Co. of Louisiana, and the Magnolia Petroleum Co.

Markham, Tex. crude was posted at 85 cents flat.

* * *

DALLAS.—On April 10 Magnolia Petroleum Co. adopted the same price schedule in Texas, Oklahoma and Kansas as Prairie's Oklahoma-Kansas schedule, with the exception of these grades below 31 gravity which differ from the Prairie prices: below 26 gravity, 70 cents; 26-26.9, 76 cents; 27-27.9, 82 cents; 28-28.9, 88 cents; 29-29.9, 95 cents; and 30-30.9, $1.02. 31-31.9 gravity is $1.10, and the rest of the schedule same as Prairie in Oklahoma and Kansas fields.

On April 10 Magnolia met Humble's postings in West Texas fields. including Crane, Upton, Winkler, Mitchell, Howard and Glasscock counties. The same prices as Humble pays in Winkler, Crane, etc., apply in the above counties. Humble maintains separate postings for Howard and Glasscock counties but Magnolia's schedule is the same in all West Texas fields.

Magnolia also met Humble's postings in the Texas Panhandle. including Carson, Hutchinson and Gray counties. and advanced Wheeler county prices in amounts ranging from 2.5 to 11.5 per barrels. The 5 and 3½ cent differentials were put into effect in this county, 5 cents for grades below 34 gravity, and from 34 gravity upward 3½ cents. Below 30 gravity is posted at 75.5 cents, with 5 cents additional for each grade up to and including 34-34.9 which is $1.005; and 3½ cents additional for each succeeding gravity, up to top grade of 44 and above, which is $1.355 per barrel.

On April 11, Magnolia met the Standard of Louisiana prices in the North Louisiana and Arkansas fields, including Pine Island, Haunesville, Bull Bayou, El Dorado and the Rainbow pool. It also met Standard's postings in Cotton Valley and in Smackover.

On April 11 Magnolia advanced East El Dorado, Ark., crude 15 cents per barrel, to 90 cents per barrel.

On April 10 the Magnolia also raised prices of Mirando, Luling and Darst Creek, southwest Texas crudes 10 cents and Corsicana heavy, 5 cents. New prices for Mirando and Luling are 85 cents; Darst Creek $1.15; and Corsicana heavy 80 cents.

* * *

NEW ORLEANS.—On April 11 Standard Oil Co. of Louisiana adopted in North Louisiana and Arkansas fields the price schedule posted in North Texas by the Humble. That schedule in Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and Sabine begins with 87 cents for below 28 gravity; 92 cents for 28-28.9 gravity, with 5 cents additional for each grade up to 34-34.9 which is $1.22; and with 3½ cents additional for each grade from 35-35.9 which is $1.255 up to top grade of 44 and above at $1.57.

Cotton Valley below 36 gravity was advanced 5 cents, new price being 85 cents. Beginning with 36-36.9 gravity at $1.29, the prices are the same as those posted for Caddo, Homer, Haynesville, etc. Into this Cotton Valley classification the Standard added Sarepta and Carterville fields.

The Standard also advanced Smackover, Ark., crude 5 cents per barrel, making the price of below 24 gravity 90 cents, and 24 and above $1.05.

Bellevue was advanced to $1.15, an increase of 10 cents.

* * *

CASPER.—On April 10 Midwest Refining Co. adopted Prairie's Oklahoma-Kansas crude prices for Salt Creek, Wyo. crude, posting 29-29.9 at $1.00; and 5 cents additional for each degree of gravity up to and including 32-32.9 which is $1.15; and 3½ cents additional from 33-33.9 which is $1.185, up to top grade of 37 and above, which is $1.325 per barrel.

On April 11 the Midwest company advanced Grass Creek light, Elk Basin, Osage and Cat Creek crudes 10 cents; to these new prices: $1.55 for Grass Creek and Elk Basin; Osage $1.63 and Cat Creek, $1.55 per barrel at wells.

* * *

NEW YORK.—On April 11 Tidewater Pipe Co., Ltd., met the Ohio Oil Co.'s advance of 10 cents on Illinois crude, which brought it to $1.65 per barrel.

* * *

SHREVEPORT.—On April 11 Louisiana Oil Refining Corp. advanced all grades of Stephens, Ark. crude 6 cents, posting 76 cents for below 28 gravity, with 5 cents additional for each succeeding degree of gravity, up to top grade of 32 and above, which is $1.01 per barrel.

This advance was met immediately

(*Continued on Page* 141)

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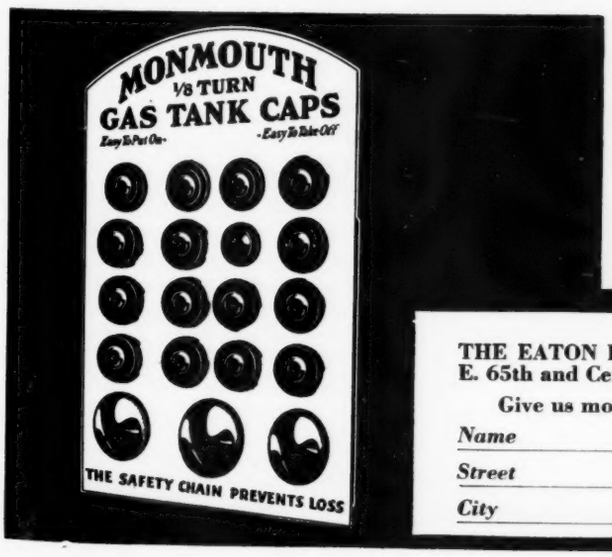

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Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended April 12 Sales	First	High	Low	Last	Change
43¾	27⅛	42⅝	17½	(sh) 992,075	N.P.	Amerada Corp.	50cQ	Jan. 31, 30	7,600	27¼	28	26¾	27	0
85	51¼	64¾	12½	(sh) 209,180	N.P.	American Republics Corp.	....	.....	7,800	34⅞	35¾	33⅞	33⅞	— ⅞
53¾	37½	47¼	32½	$56,000,000	$25	Associated Oil.	50cQ	Dec. 31, 29	390	45⅜	50¼	45⅛	48½	+ 4⅛
62½	50	77⅞	30	50,000,000	25	Atlantic Refining.	‡25cQ	Mar. 15, 30	91,000	50	51⅜	49¼	49⅜	— ¼
53	20	49⅛	20	47,261,125	25	Barnsdall Corp. A.	50cQ	Feb. 7, 30	54,400	32¾	33¼	31⅜	31⅜	— ⅜
51¼	20	49	38⅛	300,525	25	do B.	50cQ	Feb. 7, 30	.....	.....	.....	.....	.....	.....
24½	12¼	32⅞	13	(sh) 956,075	N.P.	Beacon Oil.	....	.....	31,000	17¼	20⅝	17¼	19½	+ 2⅞
36	25¼	34½	25	$51,524,150	$25	California Petroleum.	....	Jan. 1, 29	.....	.....	.....	.....	.....	.....
.....	....	37¾	18	(sh) 4,634,163	N.P.	Continental Oil (Delaware).	....	.....	204,800	29½	30¼	28⅝	28⅝	— ½
94¼	68	94¾	42¼	21,031,400	100	General Asphalt.	$1Q	Mar. 15, 30	88,700	69⅜	71½	67¾	68⅝	— ⅝
141	110⅛	138	103½	6,628,200	100	do pfd.	$1.25Q	Dec. 2, 29	.....	.....	.....	.....	.....	.....
67	79	109⅜	23	25,000,000	100	Houston Oil.	.....	.....	74,700	102⅞	*109⅜	101	104¼	+ 1⅞
38⅜	21¾	39¼	17¾	(sh) 1,333,157	N.P.	Independent Oil & Gas.	50cQ	Jan. 31, 30	61,300	30⅞	32	29½	30	— ½
39⅜	9	53	13	$4,299,190	$10	Indian Refining.	....	Dec. 15, 20	64,000	24⅞	25⅜	23⅛	23¼	— 1
37¼	8½	51¼	11½	4,550,110	10	do ctfs.	.....	.....	28,900	23	24	21¼	21⅜	— 1⅜
185	140	165	160	1,977,700	100	do pfd. new.	$1.75Q	Jan. 1, 30	.....	.....	.....	.....	.....	.....
39⅛	27⅜	38⅜	16½	3,992,387	N.P.	Lago Oil & Transport.	....	May 2, 27	2,700	25¼	26½	24½	25	0
119¾	9⅜	18	7	(sh) 1,187,298	N.P.	Louisiana Oil Refining.	.....	.....	3,500	11	11	10	10¼	+ ⅜
96	78	100¼	80	$4,000,000	$100	do pfd.	$1.62½	Feb. 15, 30	.....	.....	.....	.....	.....	.....
25½	12½	18½	5⅛	(sh) 330,000	N.P.	Maracaibo Oil.	....	.....	300	8	8⅜	8	8⅛	+ ¼
360	250	295	176	$45,942,800	$100	Mexican Petroleum.	$3Q	Jan. 20, 30	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd.	$2Q	Jan. 20, 30	.....	.....	.....	.....	.....	.....
73	4⅜	69⅜	9¼	(sh) 995,500	N.P.	Mexican Seaboard.	....	Nov. 15, 24	185,200	34⅜	37	32¼	33⅝	— ⅝
44½	25⅛	39¼	22⅛	(sh) 1,857,461	N.P.	Mid-Continent.	50cQ	Feb. 15, 30	30,200	32½	33	31¼	32	— ⅝
120½	103¼	121	120¼	$6,718,000	$100	do pfd.	$1.75Q	Dec. 1, 29	.....	.....	.....	.....	.....	.....
7⅜	2⅜	5⅛	⅝	23,849,720	10	Middle States.	....	July 1, 23	.....	.....	.....	.....	.....	.....
5⅛	1½	3⅝	⅜	5,950,500	10	do ctfs.	....	.....	3,600	1¾	1¾	1⅝	1¾	0
2¼	1	1½	⅝	(sh) 3,500,000	N.P.	Pacific Oil.	....	.....	3,100	1⅛	1¼	1⅛	1⅛	0
55½	38¼	69	40¼	$50,000,000	$50	Pan American P. & T.	....	Oct. 20, 27	900	55	57⅞	55	57⅞	— 2⅝
58¾	37⅜	69¼	40½	121,101,400	50	do B.	....	Oct. 20, 27	11,800	55⅜	59¾	55⅜	57	+ 1½
28⅜	15½	17½	13½	(sh) 400,000	N.P.	Pan. American Western B.	....	Jan. 30, 27	.....	.....	.....	.....	.....	.....
21⅜	11½	15¼	3	199,370	N.P.	Panhandle P. & R.	....	.....	4,800	7	8¼	7	7¾	+ ½
106¼	70	76	47½	$2,935,200	$100	do pfd.	....	July 2, 23	600	..	57¼	55	57	+ 5½
53⅞	35¼	47	24¼	(sh) 2,406,803	N.P.	Phillips Petroleum.	50cQ	Apr. 1, 30	67,500	40⅞	41⅞	39¾	39⅞	— ⅜
5¼	1½	3⅜	1	$29,622,925	$25	Pierce Oil Corp.	....	.....	18,300	2	2¼	1¾	2¼	+ ¼
50	16¼	51½	20	15,000,000	100	do pfd.	....	Feb. 1, 22	3,000	38	42½	42⅜	41⅝	+ 3⅜
6⅝	3½	5⅞	⅛	(sh) 2,500,000	N.P.	Pierce Petroleum.	.....	.....	68,300	5½	6½	5½	6½	+ ⅞
64⅝	59½	65⅝	40½	$60,636,450	$25	Prairie Oil & Gas.	50cQ	Mar. 31, 30	9,300	52½	53	51¾	52¾	+ ¼
.....	....	65	45	101,250,000	25	Prairie Pipe Line.	‡75cQ	Mar. 31, 30	4,600	56⅜	57	55⅝	56¼	+ ¼
29⅜	16	25⅜	4	37,450,850	50	Producers & Refiners.	....	Sept. 15, 23	3,900	11⅜	11¾	11	11	— ⅜
49⅝	41	46¾	25½	2,845,350	50	do pfd.	....	May 1, 25	40	35	35	34	34	— 1
31¼	19	30¾	20	75,959,255	25	Pure Oil Co.	37½cQ	Mar. 1, 30	54,900	26½	21¼	25½	25¾	— ½
119	108	116	108	13,000,000	100	do 8% pfd.	$2Q	Apr. 1, 30	240	114	114¼	113½	113⅞	— ⅛
56	23½	49⅝	20	47,127,725	25	Richfield Oil.	50cQ	Feb. 15, 30	66,000	27	28	26¼	26⅜	— ⅝
.....	....	42½	15	(sh) 1,200,000	N.P.	Rio Grande Oil Co.	50cQ	Jan. 25, 30	29,100	25⅝	25¾	23⅛	23¼	— 1½
64	44⅝	64	43⅛	(sh) 546,646	$13.40	Royal Dutch N. Y. shares.	$1.3415	Feb. 5, 30	21,000	56	56½	54½	54½	— ½
57½	39⅜	55⅛	22⅜	(sh) 65,203,000	£2	Shell Transport & T.	97c	Jan. 28, 30	290	46¼	46½	46¼	46⅜	+ ⅛
39⅜	23¼	31⅜	19	12,254,979	N.P.	Shell Union Oil.	35cQ	Mar. 31, 30	31,900	25¼	25½	24¼	24¼	— ¾
27¼	18⅜	40⅛	15	$8,357,280	$10	Simms Petroleum.	40cQ	Mar. 15, 30	69,700	35½	36¼	32¼	33½	— ¾
46¾	17⅜	45	21	5,494,095	N.P.	Sinclair Consolidated.	50cQ	Jan. 15, 30	147,800	31¾	32	30½	31	— ¾
110	102½	111¾	103	$16,025,200	$100	do pfd.	$2Q	Feb. 15, 30	100	111¾	*111¾	111¾	111¾	— ⅛
42⅜	25	46½	28	27,396,590	25	Skelly Oil Co.	50cQ	Mar. 15, 30	63,400	40⅞	42	39⅝	40⅜	— ⅝
80	53	81⅞	51½	(sh) 13,016,435	N.P.	S. O. California.	62½cQ	Mar. 15, 30	64,800	71⅝	73¾	70⅝	71	— 1
59¾	37¾	83	48	$612,095,850	$25	S. O. New Jersey.	‡25cQ	Mar. 15, 30	519,800	79	80⅜	77⅝	79	— ¾
45½	28¾	48⅛	31¼	434,094,575	25	S. O. New York.	40cQ	Mar. 15, 30	117,000	38⅛	38⅝	36¾	37¼	— ⅝
77	31½	84⅜	53	(sh) 1,297,847	N.P.	Sun Oil.	‡25cQ	Mar. 15, 30	3,000	68½	70	67	67½	— ⅞
110	110	105½	100	$5,000,000	$100	do pfd.	$1.50Q	Dec. 2, 29	220	103⅝	104½	103⅝	104½	+ ½
14¼	2½	24	5¼	(sh) 1,304,698	N.P.	Superior Oil Corp.	....	Dec. 20, 20	9,100	7½	8	7½	7¾	+ ¼
74¾	50	71⅞	50	$211,082,925	$25	The Texas Corp.	75cQ	Apr. 1, 30	52,000	59½	59¾	58½	58¾	— ¼
26⅝	12⅜	23⅞	9	8,380,340	10	Texas Pacific Coal & Oil.	2½%s	Dec. 31, 29	14,200	13	13⅜	12½	12½	— ⅝
41½	19⅝	40	14	(sh) 2,179,275	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 29	500	29	30	29	30	+ 2
100½	86¾	97½	85⅛	$20,321,000	$100	do 5½% pfd.	$1.25Q	Feb. 15, 30	500	91½	93½	91½	93½	+ 1
25	14¾	23½	10	(sh) 4,877,976	N.P.	Tide Water Associated.	30cQ	Feb. 15, 30	81,400	17	17⅞	16¾	17½	+ ⅝
91⅜	81⅞	90⅞	74⅛	$72,989,200	$100	do pfd.	$1.50Q	Apr. 1, 30	400	87⅛	87⅝	87⅛	87⅜	+ 1⅛
14½	6¾	20¼	5⅛	(sh) 3,842,029	N.P.	Transcontinental Oil.	.....	.....	59,200	20⅛	*20¼	19	19⅛	— ⅜
58	42¾	54½	41⅛	$40,858,375	$25	Union Oil of California.	‡50cQ	Feb. 10, 30	14,000	48⅞	50	47⅛	47¼	— ⅝
128½	110	163¾	33	31,101,200	100	Union Tank Car Co.	$1.25Q	Mar. 1, 30	4,200	36½	38½	36½	38½	+ 2
44⅛	26	42⅛	15	(sh) 488,359	N.P.	Warner Quinlan.	25cQ	Apr. 3, 30	145,600	18½	27	18½	27	+ 8⅞
38	20⅛	38	25	(sh) 490,000	N.P.	White Eagle Oil & Refining.	50cQ	Jan. 20, 30	.....	.....	.....	.....	.....	.....
22⅛	17¼	29¾	11⅛	(sh) 428,967	N.P.	Wilcox Oil & Gas.	....	May 10, 28	1,900	18	18⅝	18	18	0

*New High †New Low xEx-Dividends ‡Also Extras s-Stock Total Sales 2,708,480

W. F. Burke Organizes Lube and Soap Firm

CLEVELAND, April 14.—William F. Burke, who was general manager of the Kentucky Independent Oil Co. of Covington, Ky., which recently was purchased by Shell Petroleum Corp., has organized the Burke Oil Sales Co. to distribute motor oils, greases and oil soaps. Mr. Burke is president, serving a third term, of the Ohio Petroleum Marketers Association and has been a director of that organization during most of its existence.

The new company has headquarters at 32nd and Frazier Sts., Covington, and has associated with it at the Covington office Al Macke, Gus Staffenborg and Porter Stamper. Its organization also includes Grover King, Falmouth, Ky.; Clyde Sheidler, Dayton, O., and LeRoy Long, Springfield, O.

The company has become a distributor of Quaker State motor oils in the Cincinnati trade territory and also will market its own brands of motor oils, greases and soaps, Mr. Burke announced.

Financial Notes

Derby Oil & Refining Co.—Plans are discussed at annual meeting for paying back dividends on $4 no par cumulative preferred stock. Directors and officers elected.

North Central Texas Oil Co.—Directors re-elected at annual meeting.

Venezuela Petroleum Co.—Directors re-elected at annual meeting of this Sinclair Consolidated Oil Corp. controlled company.

Standard Oil Co. of Ohio—W. A. McAfee, general counsel, and Harry Spears elected directors, making seven on board. Other five directors re-elected.

Pittsburgh Stock Exchange

Transactions week ended April 11, 1930

	Sales	High	Low	Last	Change
Ark. Nat. Gas....	1,005	16½	15½	16	— ⅜
do pfd.....	278	7⅞	7⅞	7⅞	0
Devonian Oil....	280	10	9¾	9¾	— ¼
Dixie & Util. pfd..	1,069	94	93	93	+3
Leonard Oil.....	26,905	4¾	3⅞	4¼	+ ¼
Lone Star Gas...	21,192	48½	46¾	47¾	+1⅜
do pfd.....	100	109	109	109	— ¼
Plymouth Oil....	1,195	26½	25½	25¾	— ⅜
Pgh. Oil & Gas...	457	3	3	3	0
Salt Creek Cons..	70	2	2	2	0
Shamrock Oil & Gas	11,411	*27½	23	25	+2
Phoenix Oil.....	880	.80	.75	.75	+.15
do pfd.....	500	.65	.65	.65	+.15
Shamrock Oil & Gas 6s.....	$4,000	100	100	100	+1

*New high.

Pittsburgh Curb Market

Transactions week ended April 11 1930

	Sales	High	Low	Last	Change
Arkansas Gas A..	933	16¾	15½	16	....

H. F. Wilcox Oil & Gas Co.—Directors re-elected. Carl L. Miller elected assistant secretary. Other officers re-elected.

Crude Price Changes

(*Continued from Page* 138)

by the Atlantic Oil Producing Co.

The Louisiana company also advanced Urania, La. crude 15 cents, making new price 90 cents per barrel. This was met by the Arkansas Natural Gas Co.

The Louisiana company on April 11 met the Standard Oil Co.'s advance in Caddo, Homer, Haynesville, El Dorado, Cotton Valley, Smackover and Bellevue districts.

On April 11 Gulf Refining Co. met the Standard postings in Caddo, Homer, Haynesville, Bull Bayou, Crichton, De Soto, Eldorado and Smackover and posted Calion heavy crude (East El Dorado field) at 90 cents, the same as Magnolia Petroleum Co.

* * *

FINDLAY, O.—On April 11 Ohio Oil Co. advanced Elk Basin, Grass Creek, Lance Creek and Rock Creek crudes 10 cents, and Big Muddy and Artesia, N. M., 5 cents. New prices are: Elk Basin and Grass Creek, $1.55; Big Muddy, $1.38; Lance Creek, $1.63; Rock Creek, $1.35; and Artesia, $1.05.

* * *

TORONTO.—On April 11 the Imperial Oil Refineries, Ltd. advanced Canadian crude 5 cents, making new prices of Petrolia, $2.10 and Oil Springs, $2.17 per barrel at wells.

S. O. California Forms Utility Subsidiary

LOS ANGELES, April 10.—To facilitate operations, Standard Management & Operating Co. has been organized as a subsidiary of Standard Oil Co. of California.

According to the announcement, the new company will direct operations of Standard's public utility subsidiary, the Pacific Public Service Corp., and its various subsidiaries which were recently acquired to provide an economical commercial distribution of the parent company's natural gas output.

It is further indicated in the statement that this managing company will engage in engineering and construction work, specializing in gas and electric systems. There is considerable speculation as to whether this reference to electric systems may be construed to mean that the California company intends to enter into a program calling for generation and distribution of electric power.

E. F. English, associated with Pacific Public Service Corp. prior to its acquisition by Standard, is president of the new company with R. W. Hanna, a director of Standard Oil, and J. H. Tuttle, vice-president and treasurer, respectively.

The Public Service Corp. is preparing to extend its distribution of natural gas to communities in northern and southern California and to enlarge its existing facilities in the central part of the state.

Ethylene Sales Told to Stop Anti-Knock Claims

WASHINGTON, April 11.—William H. Johnson, trading as the Ethylene Sales Co., Dallas, Tex., has been ordered by the Federal Trade Commission to discontinue the claims, in his sales of a fluid for treating motor fuel, that it would produce anti-knock properties in the fuel.

The commission has also ordered him not to use the words, "Ethylene," or "Anti-Knock," or "Nox It," or "Nox out Nox," in such sales.

The commission reported that its findings showed that this fluid, when mixed with gasoline, did not produce a motor fuel having anti-knock properties.

Unauthorized use of the line "Reg. U. S. Pat. Off." is prohibited and the company is enjoined from displaying both the words, "Works at Passaic, N. J." and a picture indicating a manufacturing plant at Passaic, unless and until it actually owns or operates such a plant there.

Johnson is also directed to discontinue furnishing to dealers globes for gasoline pumps similar in general appearance to such globes made available to dealers by distributors or sellers of motor fuel or gasoline.

The company is further ordered to stop simulating, copying or imitating in general appearance the signs, placards and advertising literature of distributors or sellers of motor fuel or gasoline.

The company's product was sold under such names as "Ethylene Fluid," "Ethylene Fluid Anti-Knock Gasoline" and "New and Super Ethylene Fluid and Hyco."

Respondents listed in this case are William H. Johnson, doing business as Ethylene Sales Co., and Hathaway & Hamilton; J. Merrell Redding, doing business as Ethyl Gas Co., and J. H. Hathaway, doing business as American Chemical Co., all of Dallas, Tex.

The commission ordered that the complaint in this case be dismissed without prejudice as pertaining to the respondents J. Merrell Redding, doing business as Ethyl Gas Co., and J. H. Hathaway, doing business as the American Chemical Co.

Cities Service Buys N. Y. Jobber

NEW YORK, April 12.—Cities Service Co. has bought the Newcombe Oil Co. of Kingston, N. Y. The Newcombe company has Hudson river terminals at Kingston, Newburgh and Rensselaer, N. Y. and service stations or dealer outlets from Newburgh to Albany, mostly on the west side of the Hudson.

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Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div Rate	Last Paid	Transactions Week Ended April 12 Sales	First	High	Low	Last	Change
22⅜	14⅞	18¾	14¼	£4,126,460	£ 1	Anglo-American Oil	36c	June 5, 29	.....	....	....	....	....	.....
21¼	15	18	12¼	.....	....	do certificates	36c	June 5, 29	.....	....	....	....	....	.....
20½	14⅜	17	11	.....	£ 1	do ctfs. non-voting	36c	June 5, 29	.....	....	....	....	....	.....
5	1¼	2½	½	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	200	¾	1	¾	1	+ ¼
9¾	3¼	4⅜	1	$10,000,000	$50	do pfd	.....	.....	.....	....	....	....	....	.....
56	44½	46½	23¼	$1,000,000	25	Borne-Scrymser	$1 S.A.	Oct. 15, 29	.....	....	....	....	....	.....
76	58	74¼	55	10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 30	1,400	61	61	58	59	— 2¾
161	117¼	210	130	3,000,000	25	Chesebrough Mfg	‡$1Q	Mar. 31, 30	2,000	165	184⅞	165	175	+10
23	16	29	8⅛	36,123,350	10	Continental Oil	.....	Dec. 15, 27	1,200	17¾	17¾	17⅜	17½	+ ⅛
17½	9½	11¾	5⅝	.....	N.P.	Creole Petroleum	.....	.....	5,100	7	7⅛	6⅝	6⅝	— ⅛
82	67	95	40	1,500,000	50	Cumberland Pipe Line	$1Q	Mar. 15, 30	400	40½	41	40½	41	0
88	64⅛	70½	42	5,000,000	100	Eureka Pipe Line	$1Q	Feb. 1, 30	.....	....	....	....	....	.....
13	4¼	7	3	16,000,000	100	Galena Signal Oil	.....	June 30, 25	200	3½	3½	3½	3½	0
86	26	90	73½	4,000,000	100	do new pfd	.....	June 30, 26	40	76	76¼	75	76¼	+ 1¼
89¾	35	88	71½	2,000,000	100	do old pfd	.....	June 30, 26	110	76	76	76	76	0
114¾	59¼	128	74⅛	73,685,700	25	Humble Oil & Refining	50cQ	Apr. 1, 30	14,300	115	119	114	116	+ ¼
290½	176½	340½	260	20,000,000	100	Illinois Pipe Line	$4.50	Mar. 25, 30	.....	....	....	....	....	.....
104	56¾	41	22	(sh) 26,421,768	N.P.	Imperial of Canada	12½cQ	Mar. 1, 30	18,800	28¼	30	27⅞	28¾	+ 1
91⅞	74⅜	41⅞	26	$1,000,000	$10	Indiana Pipe Line	‡50cQ	Feb. 15, 30	400	39	39	38½	39	+ ⅛
55	35	37½	15	(sh) 14,247,088	N.P.	International Petroleum	25c	Mar. 15, 30	28,200	23	24	22½	23¾	+ 1½
32⅜	19⅛	25⅞	10½	$6,363,350	12.50	National Transit Co	25cQ	Mar. 15, 30	1,200	20⅜	20⅜	20	20	— ½
75	38½	85	72	1,000,000	10	New York Transit	‡40cQ	Jan. 15, 30	.....	....	....	....	....	.....
....	....	....	....	.....	....	do new	.....	.....	100	14½	14½	14½	14½	+ ½
69	56½	63	41	2,000,000	50	Northern Pipe Line	$2 S.A.	Jan. 2, 30	.....	....	....	....	....	.....
83⅛	58½	79⅞	64⅛	60,000,000	25	Ohio Oil Co	‡50cQ	Mar. 15, 30	1,200	74½	74½	71⅞	72¼	— 1¾
84	28	44½	18⅝	10,000,000	25	Penn Mex. Fuel	$1	Dec. 14, 29	1,700	23½	32	22⅞	30⅛	+ 7⅛
220	167	50	24⅞	4,000,000	25	Solar Refining	$1.25 S.A.	Dec. 20, 29	200	24⅞	24⅞	†24⅞	24⅞	— ⅛
19	12	23½	13	1,000,000	10	Southern Pipe Line	$1	Mar. 1, 30	400	15	15	15	15	+ ⅛
71⅛	36¾	60¼	35⅛	30,000,000	25	South Penn Oil	‡50cQ	Mar. 31, 30	5,100	44⅝	45⅞	44	44	— 1
102	70	70	45	1,750,000	50	South West Pa. Pipe Lines	$1	Apr. 1, 30	50	50	50	50	50	— ⅛
95⅛	70⅛	63	45	348,175,069	25	S. O. Indiana	62½cQ	Mar. 15, 30	13,800	59	59⅞	57⅜	57⅞	— ⅜
27¾	15	40	18	8,000,000	25	S. O. Kansas	50cQ	Mar. 15, 30	.....	....	....	....	....	.....
49	44	46¾	29	25,654,516	10	S. O. Kentucky	‡40cQ	Mar. 31, 30	7,500	36½	37	35½	35⅞	— ⅜
54⅜	39⅛	50¼	40	4,649,225	25	S. O. Nebraska	‡62½cQ	Mar. 20, 30	100	48⅞	48⅞	48⅞	48⅞	+ ⅜
34	71	129	60	14,000,000	25	S. O. Ohio	62½cQ	Apr. 1, 30	350	102½	102¾	99	99¾	— 4¼
25	116	125½	106	7,000,000	100	do pfd	$1.75Q	Mar. 1, 30	70	119¾	119¾	119	119¼	— 1¼
23½	16	18	5⅛	861,466	25	Swan Finch	30c	Jan. 15, 29	.....	....	....	....	....	.....
111	72	133¾	75	126,154,000	25	Vacuum Oil	$1Q	Mar. 20, 30	12,800	94½	95⅝	92	92⅞	— 1⅛

*New High †New Low ‡Also Extras.

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Sales	First	High	Low	Last	Change
1½	.53	.72	.125	$5	Amer. Cons. Oilfields	34,100	¼	¼	3/16	¼	0
9½	3⅛	8⅝	1⅛	N.P.	Amer. Maracaibo	8,500	2	2½	2	2½	+ ½
4½	2¼	4¾	1	$10	Argo Oil	.....	....	....	....	....	.....
3¾	3⅜	26	3¾	N.P.	Arkansas Nat. Gas	13,900	16¾	16¾	15½	15¾	— ¼
....	....	24¾	6½	N.P.	do A	60,300	16½	16⅝	15¼	15½	— 1
....	....	9	4	10	do pfd	600	7⅞	7⅞	7⅞	7⅞	0
55	32¾	70	50	N.P.	British American Oil	.....	....	....	....	....	.....
23⅞	3¾	4⅞	⅜	25c	Carib Syndicate	4,800	1½	1¾	1½	1⅝	+ ⅛
....	....	68⅝	20	N.P.	Cities Service new	318,000	42	42¼	40	42	— ½
103½	94½	99¼	84	100	do pfd	3,200	93½	93⅞	92⅛	92½	— 1⅛
9⅝	8⅞	9¼	8	10	do pref. B	200	8⅜	8⅝	8⅜	8⅝	+ ¼
97	88½	96	81	100	do pref. BB	.....	....	....	....	....	.....
2¼	1	1½	¼	1	Colombia Syndicate	87,800	3/16	¾	3/16	3/16	+ 1/16
17¾	9¼	15	3⅞	N.P.	Colon Oil	1,800	7	7⅜	6⅞	6⅞	— ⅛
8⅞	6¼	11⅜	2½	10	Consolidated Royal	400	4½	4⅝	4½	4⅝	0
....	....	135	42	N.P.	Cosden Oil Co	9,800	56¼	70¼	43⅞	63	+ 1
....	....	82	55	....	do pfd	.....	....	....	....	....	.....
3¼	.76	2½	¼	N.P.	Crown Central	1,500	⅝	⅞	⅝	⅞	+ 1/16
15	6¾	11¾	4	N.P.	Crystal Oil	.....	....	....	....	....	.....
50	48	51⅛	51⅛	$100	do pfd	.....	....	....	....	....	.....
33½	8⅛	26	6½	N.P.	Darby Petroleum	18,400	10⅜	12	10	12	+ 2¼
2⅞	1	11	2	N.P.	Derby Oil & Refining	17,800	7½	10⅜	7½	10	+ 2⅜
21⅜	7½	54	5	N.P.	do pfd	100	54	*54	54	54	+13¾
165	101⅛	209	115	$25	Gulf Oil Corp	18,400	156⅞	160⅞	155	155½	0
7½	5⅜	7½	1⅛	5	Homaokla Oil	800	3½	3½	3½	3½	+ ½
....	....	53½	5	$1	Indian Territory	31,800	52⅜	*53½	51⅞	53	+ ⅝
3⅜	1	2⅛	⅜	10	Intercontinental Pet.	16,900	1⅛	1¼	1	1¼	+ ⅛
3	¼	3⅝	1¼	N.P.	Kirby Petroleum	7,800	2⅝	3	2⅝	2⅞	— ⅛
9⅜	5½	6⅛	1	N.P.	Leonard Oil & Dev	38,800	3¾	4¾	3¾	4¼	+ ¼
43⅜	20	38⅞	18	N.P.	Lion Oil & Refg	2,300	28½	28⅝	27⅜	28½	— ½
....	....	67⅞	28	N.P.	Lone Star Gas	12,700	47	50½	46½	50	+ 3
1⅞	.50	1¼	¼	1	Magdalena Syndicate	3,800	5/16	5/16	5/16	5/16	+ 1/16
48½	32	38½	12	N.P.	Margay Oil	1,800	12	16	†12	15	— 1½
8	2¾	7½	2	N.P.	Mexico-Ohio Oil	8,800	2⅝	*7½	2⅝	4½	+ 2⅛
....	....	42	8	N.P.	Missouri-Kan. P. L.	29,800	28¾	29	28⅜	29	+ ½
1¾	.76	1½	¼	1	Mountain & Gulf	1,800	⅝	¾	⅝	¾	+ ⅛
28⅞	19½	22⅞	7	10	Mountain Producers	5,900	11⅞	12⅛	11½	12	+ ⅛
....	....	43¾	24	N.P.	Nat. Fuel Gas (new)	1,800	33¾	33¾	31¾	32	— 2¼
5⅜	4¼	5	2¼	5	New Bradford	700	3¼	3¼	3	3	— ⅛
5½	3	3⅞	2¾	10	New England Fuel	100	3⅛	3⅛	3⅛	3⅛	0
11⅞	7⅛	9⅜	2¼	1	New Mex. & Ariz	400	5⅝	5¾	5⅝	5⅝	— ⅛
15½	11½	24½	10⅛	25	New York Petrol	400	11	11⅞	10¼	11⅞	+ 1⅝
13¼	8⅛	18½	6⅛	N.P.	North Cent. Texas	1,800	10	11¼	10	11	+ 2⅝
....	....	19¼	8⅛	N.P.	Oil Stock, Ltd. A	800	10¼	10½	10¼	10½	— ¼
....	....	18¾	8½	N.P.	do B	600	11	11	11	11	0
26¼	20	26⅝	12½	N.P.	Pacific Western Oil	4,200	19	19½	17½	18	— ½
6	2¼	3½	½	N.P.	Pandem Oil	14,500	2⅜	2⅜	1¾	2	— ⅜
15⅜	8½	10½	2½	N.P.	Pantepec Oil	1,900	3¾	3¾	2¾	2¾	— ⅞
20	10⅝	25½	22½	$25	Paragon Refg. B ctfs.	.....	....	....	....	....	.....
....	....	34½	17	N.P.	Petroleum Corp	25,500	25⅝	26	25	25¼	— ½
31⅜	26½	37	22	N.P.	Plymouth Oil	1,800	25⅞	26	25	25⅜	— ¼
18	8	16	9	25	Red Bank Oil	.....	....	....	....	....	.....
13	4⅛	8½	1⅜	N.P.	Reiter-Foster	3,600	2⅞	3¾	2¾	3¾	+ ⅞
31½	23¼	25½	19	$25	Richfield pfd	.....	....	....	....	....	.....
....	....	29	13	....	Root Refining pfd	100	17¼	17¼	16	16	+ ½
12	4⅜	11	3	N.P.	Ryan Consolidated	1,400	4¾	5¼	4¾	5	+ ½
7¼	5½	5⅞	1⅞	$10	Salt Creek Cons	.....	....	....	....	....	.....
35	23¼	25⅞	9	10	Salt Creek Prod	3,800	14¼	15¼	14¼	15	+ ¾
3½	1	2½	⅛	5	Savoy Oil	.....	....	....	....	....	.....
40	27	33⅛	10	25	Shreveport El Dorado	.....	....	....	....	....	.....
....	....	24	9	N.P.	Southland Royalty	5,400	10⅜	10½	10	10¼	— ¼
....	....	12	4	N.P.	Sunray Oil	4,300	7¼	9⅜	6¾	9⅜	+ 1⅞
....	....	23	7⅛	N.P.	Texon Oil & Land new	1,200	11¼	12	11⅛	12	+ ¾
22⅞	13	16⅞	11⅜	$10	Tidal Osage	.....	....	....	....	....	.....
21¼	13⅛	16½	10¼	10	do not-voting	.....	....	....	....	....	.....
93¾	75	155	80	100	Transcontinental pfd	.....	....	....	....	....	.....
74½	18	81⅛	66	10	Venezeula-Mexico	.....	....	....	....	....	.....
9⅜	4¾	6½	1⅜	3	Venezuelan Petrol	4,100	3⅜	3¾	3½	3½	— ⅛
....	....	66	2¼	N.P.	White Star Oil	.....	....	....	....	....	.....
8¼	4⅜	9⅛	2	1	Woodley Petroleum	600	3¼	3½	3¼	3½	+ 1
⅝	⅛	5⅜	¼	25	Y Oil & Gas	5,800	1½	2½	1½	2⅜	+ 1⅛

*New High †New Low

New York Bonds

Week ending Apr. 11

	High	Low	Last	Change
Assoc. Oil gold 6s	103	102½	102½	— ¼
Atlantic Refg. deb. 5s	102	101¾	102	— ½
Cal. Pet. 5s	99½	98¼	99¼	0
Cal. Pet. 5½s	101⅞	101⅝	101⅞	+ ⅛
General Pet. 5s	101¾	101¾	101¾	+ ¼
Humble Oil & Refg. 5s	101⅛	100¼	100½	— ¾
Humble Oil & Refg. 5½s	102	101⅝	101⅝	0
Pan Amer. P. & T 6s	104	103½	103½	+1
Pan Amer. P. & T. 6s	98	97	98	+1¼
Phillips Pet. 5½s	95¼	95	95¼	0
Pure Oil 5½s	99½	99¼	99½	+ ¼
Richfield Oil of Calif. 6s	97	96½	96½	— ½
Shell Union Oil 5s	97½	97	97⅛	— ⅛
Sinclair Con. Oil 7s	104	103⅜	104	0
Sinclair Con. Oil 6½s	102½	102	102	— ½
Sinclair Con. Oil 6s D	100½	100½	100½	— ¼
Sinclair Con. Crude 5½s	100	99	99¾	— ¼
Sinclair Pipeline	99	98	98½	— ¼
Skelly Oil 5½s	95¼	94½	94½	— ¼
S. O. N. J. 5s	103⅜	103⅛	103⅜	0
S. O. N. Y. 4½s	97¼	96½	96¾	— ½
Union Oil of Calif. 6s A	106	106	106	— 2¼
Union Oil of Calif. 1st 5s A	101¾	101¾	101¾	+ ⅜
Union Oil of Calif. 5s C	100	100	100	— ⅛
Warner-Quinlan 6s	90	88	90	+2¼
White Eagle Oil 5½s	107	106⅛	107	+ ½

New York Curb Bonds

Week ending Apr. 11

	High	Low	Last	Change
Beacon Oil 6s '36	106⅝	104⅛	106⅝	+2⅜
Cities Serv. 5s '66	87½	87	87	—1
Cities Serv. G. 5½s '42	88½	88	88½	+ ¾
Cities Serv. G. P. 6s '43	95	93¼	95	+1½
Cont. Oil 5¼s '37	97½	96½	97	— ½
Empire O & R 5½s '42	88½	87⅞	88⅛	+ ¾
Gulf Oil 5s '37	101½	100⅛	100½	— ¼
Gulf Oil 5s '47	101¾	101⅝	101¾	0
Indep. Oil 6s '39	110⅜	107	108¼	0
Pure Oil 5½s '40	98	97½	97¾	— ¼
Sun Oil 5½s '39	102½	101¾	102½	+ ¾
Union Oil of Calif. 5s	99¾	99½	99⅝	0
Valvoline Oil 7s '37	103	102¾	102¾	— ¾

Oil Company Earnings

Year	1929	1928
Shreveport-El Dorado P. L.	$68,114	$423,012
Standard Oil, California	46,633,490	46,083,817

First Quarter	1930	1929
Union Oil Co., California	$2,600,000	$2,600,000

Oil Dividends

	Amount	Payable	Stock of Record
Lone Star Gas pfd. q.	$1.62	May 1	Apr. 19
Tide Water Oil pfd. q.	$1.25	May 15	Apr. 18
Union Oil q.	50c	May 10	Apr. 17
do stock	1%	May 10	Apr. 17